

A M A T E U R R A D I O



Vol. 33, No. 10



OCTOBER
1965

2/6

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Editor:
K. M. COCKING VK3ZFQ

Assistant Editor:
K. E. Pincott VK3AFJ

Publications Committee:
G. W. Bety (Secretary) VK3AOM
A. W. Chandler (Circulation) VK3LSC
S. T. Clark VK3ASC
E. C. Manfield VK3EMH
W. E. J. Roper VK3ARZ

Advertising Enquiries:
C/o. P.O. Box 36, East Melbourne, C.B. Vic.
or
Mrs. BELLAIRS, Phone 41-2535, 476 Victoria
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THE EDITOR,
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OUR COVER

Cheng Ann Cheok and Norman Salmon, of the Royal Victorian Institute for the Blind Youth Radio Club, working on one of the projects they had to complete to gain their Elementary Certificates.

Photo courtesy of "Herald," Melbourne.

FEDERAL COMMENT

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Elsewhere in this issue are details of the 8th Annual Jamboree-on-the-Air which is to be held this year on October 16-17. Here is an opportunity for Amateurs to provide the means of allowing these Scouts, Girl Guides and Cubs to participate in a most enjoyable get-together.

In return you will (a) hear some very interesting items about the Scouting movement; (b) enable some lasting friendships to be made or continued; (c) gain some friend for, or possibly even new members to, Amateur Radio; (d) get the operating bug again possibly, if you have become inactive.

This idea was conceived some eight years ago at the Jubilee Jamboree at the Sutton Coalfield, England, when a number of the scouts present, who were also Amateurs and headed by a Mr. Les Mitchell, decided to keep a sked at the same time in the following year and renew the friendships of the Jamboree. Since then the idea has grown into a very popular and useful event, and each year some thousands of scouts look forward to conversing, and exchanging ideas, with members of other troops, be they in neighbouring towns or other countries. They need your help to do this.

Remember, it is not necessary to work DX stations—local and interstate contacts, as well as overseas contacts, have proved to be very enjoyable, especially if they are S9 signals. Thus v.h.f. and h.f. operators can all participate—any few hours you can give within the allotted 48 hours will be appreciated by these young people and their organisers; you will also enjoy it, as some of the subjects discussed are most interesting.

Last year over 350 Australian Amateurs took part and there were stations operating in over 70 countries around the world. This year the founder, Les Mitchell, using his call sign GB2LSR, at Haltham, England, will be there on 14,250 Kc. (between 1900 and 2300 hours E.A.S.T.), the official World Scout Bureau stations, VE3WSB, will be there operating three stations in Canada, VK3WI will be broadcasting an official opening at 2000 hours E.A.S.T. on Saturday, 16th. Will you be there to help?

We would commend this event to you. Why not contact your local Scout group or Divisional Organiser now? The small effort involved will be amply repaid by the appreciation shown by the scouts.

FEDERAL EXECUTIVE, W.I.A.

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GETTING RESULTS ON 2 METRES F.M.

A. J. STEWART,* VK3ZFS

THIS is an attempt to assist those amateurs using ex-commercial equipment on v.h.f. nets. As about 200 A.W.A. sets are in use, this type is of major importance, but the basic comments apply to all makes of units.

The MR3A Carphone Junior is the most popular type and will be dealt with specifically. Note that the MR10 receiver is identical to the MR3A.

Before you start, make sure that you have at least +150v. h.t. and, particularly if you are operating from 6v., check that full heater voltage is applied to tubes.

It is absolutely essential that, at all times when tuning the receiver, the limiter current be read with a meter. As the receiver tuning approaches optimum, there is a decrease in audio noise output. The same thing also occurs when the tuning is well off, only a meter tells the true story.

If you do not have access to a v.h.f. signal generator, then this problem is solved by using the transmitter and sufficient multiplier stages to give suitable signal strength.

RECEIVER

Essential is a multi-meter. If the basic movement is 0-1 mA., 100 ohms coil resistance, then your readings should be as follows:—Trip, 500-700 μ A., no signal; 1st Lim. 0.06 mA., no signal; 2nd Lim., approx. 0.1 mA. These test points are shunted with 1K ohm resistors so that the readings do not measure actual current.

R.F. STAGE

V1 6AK5, with present day trends of cascode and nuvistor stages, it seems to be inefficient. However, extensive checks reveal that a good 6AK5 will equal other types of "front ends."

The grid and anode coils need only be squeezed up to tune 144 Mc. The anode and screen dropping resistor (R2) was originally 15K ohms \pm w., this should be replaced with 27K ohms \pm w. as best results are obtained when the anode voltage is 40v.-50v.

In some units the 6AK5 will oscillate when the aerial is disconnected. This does not distract from performance in any way and provided it stops when the aerial is re-connected it should be disregarded.

It is recommended that the 1 megohm grid resistor of the 6AK5 be exchanged for two 470K ohms resistors as shown in Fig. 1.

The grid/cathode of the 6AK5 are used as a diode rectifier. Using as sensitive a meter available (500 μ A. will do) you have the ideal tune-up indicator.

There is a small amount of r.f. leakage and capacitive coupling in the aerial change-over relay, so the meter indicates maximum r.f. output from the final and it is a simple matter to tune up for maximum.

1st MIXER

V2 6AK5. The grid coil will resonate on 144 Mc. when squeezed up but the L/C ratio will not allow optimum results as the tuning C (C5) will be too large.

This coil should be replaced with one of the same number of turns wound on a $\frac{1}{2}$ " i.d. Do not attempt to increase coupling to the 6AK5 anode coil.

2nd MIXER

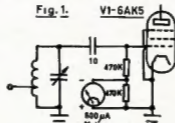
V3 6AU6. The first i.f. T3 should be adjusted on a weak but steady signal for maximum limiter current.

OSCILLATOR AND MULTIPLIER

V5 6AU6 V4 6J6. Adjust the trip, grid current for maximum with the top slugs of T6 and L2. These are the two coils adjacent to V4 and V5.

The two "air" wound coils under the chassis are T2, they should be squeezed up but do not increase the coupling. Adjust the two trimmers of T2 and the secondary of T6 (the under-chassis slug) using a weak but steady signal.

Fig. 1.



2nd I.F.

T4 to T9 inclusive will be dealt with as a group. A strong word of warning must be given about the indiscriminate use of the screwdriver on these stages.

The passband characteristic for the three i.f. stages is obtained by the use of double-tuned, over-coupled transformers. 2 Mc. is the centre frequency.

For the Amateur, the most practical alignment method is to use the damped alignment procedure. In this method the winding of the transformer not being tuned is shunted with a 5K ohms resistor, e.g., to tune the primary of T7 shunt 5K ohms across the secondary and tune the under chassis slug for maximum limiter current.

This procedure may seem a little involved at first, but is actually quite easy and results will be good.

Disable the receiver oscillator by removing the crystal. Plug in an 0-1 mA. meter to Jack CF2 designated 1st Lim.

Inject the signal generator output to the 2nd mixer grid using only sufficient signal amplitude to indicate about 0.2 mA. 1st Lim. current.

The signal generator must be accurately set on 2 Mc., modulation should not be used.

Fit two alligator clips on the 5K ohms resistor and clip this across the secondary of T9, adjust the primary slug of T9 (under the chassis) for maximum limiter current. Then clip the 5K ohms resistor across the primary of T9 and adjust the secondary (top of chassis) for maximum limiter current.

T8, T7, T5 and T4 should then be adjusted by the same method, but never use too high or too low a level of signal injection.

1st LIMITER

V9 6AU6. This stage is designed to limit at a grid current of approx. 0.8 mA. While the no signal or standing current is approx. 0.06 mA.

It also functions as a doubler stage, so the anode circuit is resonant at 4 Mc. Yes, you did read it correctly, doubling the i.f. frequency. The advantages are that the class "C" multiplier stage assists limiting action and that double the radiated deviation is fed to the discriminator.

2nd LIMITER

V10 6AU6. This stage is designed to limit at approx. 0.14 mA. while the standing current is approx. 0.1 mA., so that only a small increase of signal input will operate the 2nd limiter.

L3 may be adjusted for maximum 2nd limiter current on receiver noise with no signal input.

MUTE

V11 6AV6. With no signal input the second limiter is not operating and the residual noise is coupled through 100 pF. to the grid of V11.

This noise is amplified, rectified and filtered by the network of 470K, 33K ohms and 0.05 μ F. This d.c. is applied to the grid of the first audio amp. V13 to cut-off this stage.

The 50K pot is adjusted to set the threshold of operation so that no or reduced audio noise is heard when no signal is incoming.

When a signal is received and the second limiter operates, the noise output in the limiter anode circuit is reduced or eliminated, there is no cut-off bias and audio output is normal.

Note that the value of C57 100 pF., C55 100 pF. and R27 470K ohms are designed so that only high frequency noise is applied to the grid of V11.

DISCRIMINATOR

V12 6AL5. The primary of T10 is the only adjustment that can be made using maximum receiver noise output.

The ideal meter to adjust the discriminator secondary (T10) is 25-0-25 μ A. Plug it into Jack CF4 (discrim.), with a known accurate 2 Mc. signal input to the i.f., adjust the secondary of T10 (top slug) for zero.

A v.t.v.m. will do nicely or you could use a microammeter, reversing the leads until zero current is indicated. This method is slow but accurate.

*11 Woodstock St., Mt. Waverley, Vic.

If you still don't have the necessary equipment, don't despair. All you have to do is carefully adjust the top slug for the best possible audio quality. Be sure you adjust only on a known accurate signal.

AUDIO

V13 6AV6, V14 6AQ5: These stages are quite straightforward. Note, emphasis is accomplished by R40 1 megohm and C68 100 pF.

Receiver and transmitter use FT243 crystal sockets for the metering points, then obviously an old FT243 crystal case could be used. A suitable plug can be made with a block of bakelite approx. 5-16" x 1" about 3" long, with two pins (nails!) spaced $\frac{1}{4}$ ". It is worth the trouble as test prods don't fit too well and usually fall out, adding to the confusion.

TRANSMITTER

This basic circuit is used in almost all A.W.A. equipment likely to be in the hands of Amateurs.

Crystal multiplication is by 36 for both high and low band sets, 4051.5 Kc. x 36 will give 145.854 Mc.

Low band conversion should be made using x 24. To do this change the last tripler to a doubler.

V16 12AU7: One section of this tube acts as an amplifier of the audio input signal, feeding the second section operating as a rectifier to develop forward acting grid control bias for the constant output amplifier (6BA6).

V19 6BA6 Constant Output Amp.: This tube is fed audio via the set deviation control (100K) and the "parallel T" network of 220K resistors and 630 pF. condensers. This gives a rising frequency characteristic of 10 db. in the range of 1 Kc. to 3 Kc. for the transmitted audio pre-emphasis. This constant output amp. tube ensures that full modulation is maintained over a wide range of audio input levels. A very careful check should be made to eliminate leaking condensers, the screen bypass 0.05 μ F. and resistor 1.8 megohm should be replaced by modern, stable types.

V15 6AU6: It is a modified Pierce oscillator in the output circuit of which the f.m. signal is produced in conjunction with the modulator V17 6C4.

If you decide to install multi-channel switching, it will be necessary to change the circuit slightly to allow for the increased circuit capacity due to extra wiring. See full circuit.

The tuned circuits of L4 in the 6AU6 plate lead and L5 coupling the 6AU6 anode to the 6C4 anode, are

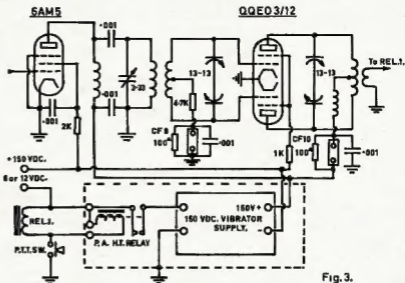


Fig. 3.

generally called "phasing coils" and serve to eliminate the "a.m." component from the buffer amp. circuit. If the "a.m." component is high, distortion due to intermodulation, etc., will be high and not adequately eliminated in the following class "C" multiplier stages. The circuits are broadly resonant at approximately 0.707 of the crystal frequency used.

Multiplier Stages: 12AU7-6C4-6C4 are easily tuned by peaking the grid current of the following stage. Using an 0-10.0 mA. meter range, readings should be approximately:-

- 1st Doubler Grid 1.3 mA.
- 1st Tripler Grid 1.8 mA.
- 2nd Tripler Grid 1.5 mA.
- 2nd Doubler Grid 2.2 mA.

The MR3A was originally fitted with a 6J6 final, but most have been converted to use a QQE03/12. See Fig. 3.

	6J6	QQE03/12
Anode Volts	150 volts	150 volts
Anode Current	30 mA.	40-50 mA.
Grid Current	15 mA.	0.8 to 1 mA.
Grid Resistor	470 ohms	4700

POWER SUPPLY

This is quite conventional and is easily adapted for 6v. or 12v. H.T. should be at least +150v.

Many Amateurs will consider an increase of r.f. power output, the obvious change is to increase the final h.t. to about 300v.

If you are financial, then just replace the internal vibrator supply with a transistor supply. If you are like the author and the "d.b." rating forbids transistors, my answer may be of interest. An extra 150v. h.t. is added to the internal 150v. supply on transmit only. Be sure that your extra 150v. supply is above ground (see Fig. 3).

If you make this change, couple the additional supply to the transceiver using a plug and socket. Then make a "captive" plug so that the transmitter can be used with the internal 150v. h.t. only.

When 300v. h.t. is used some difficulty may be experienced in obtaining sufficient grid drive, even with 300v. on the 6C4 anode. A change as shown to a 6AM5 (Fig. 3) will give plenty of drive.

Full Schematic Circuit of MR3A is featured on pages 14 and 15

ERRATUM

In the circuit diagram on page 15 of this issue, the 8 μ F. condenser on the receiver h.t. line from the relay should be on the other side of the 40 ohm resistor.

SUMMARY

Keep in mind at all times that it is your ability to copy weak signals that counts and that high or low limiter currents actually mean very little.

(Continued on page 7)

RECEIVER FREQUENCIES

Signal In	1st I.F.	2nd I.F.
145.854 Mc.	22.5504 Mc.	2.0 Mc.
	↑	
123.3036 Mc.		
× 6		
20.5504 Mc.		
× 2		
Xtal 10.2753 Mc.		

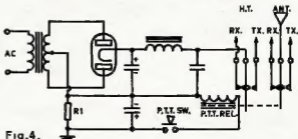
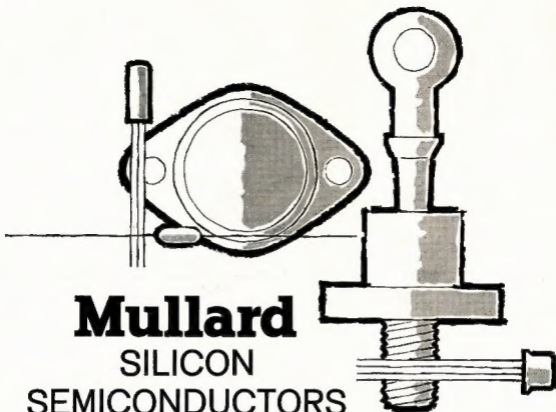


Fig. 4.



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THYRISTORS

100V to 700V maximum crest working reverse voltage
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20A to 150A maximum mean output current

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Amateur Radio, October, 1965

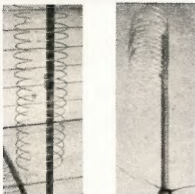
THE ANTALO*

TWO METRE HALO WITH PARASITIC ELEMENTS

ROBERT W. BANTA, K8PBA

AT this time of ever-increasing activity in the v.h.f. region of the spectrum, some serious thought has been devoted toward increasing the useful radiated power from a halo-type antenna. Heretofore, the only way that gain has been realized with antennas of this type has been by stacking driven elements. The antenna shown in the photos consists of a single driven element, and 16 parasitic rings, placed 8 above and 8 below the driven element on a common mast. The overall diameter is 10½ inches, and the total height is 33½ inches. The driven element is fed with coaxial transmission line, and the system may be easily adjusted for low s.w.r. on the line.

The name "Antalo" is a fusion of the words "antenna" and "halo." Measurements that I have made using Hewlett-Packard signal generator and v.h.f. attenuators and a receiving antenna at a distance of one mile show gains of as much as 10 db. over a reference halo, in the pattern shown in Fig. 1. Maximum gain is along a line drawn from the supporting masts through the gaps in the elements. Several others have duplicated this antenna with highly satisfactory results.



The completed "Antalo." The driven element is the double ring at the centre.

The "Antalo" aloft on its supporting mast.

CONSTRUCTION

There are no special hard-to-get items required for the Antalo, and construction is simple. Most of the work will already have been done if you buy ¼-inch aluminum clothesline that is in a roll 10½ inches in diameter. The rings are merely cut already bent to size for use as the parasitic elements. The only other materials required are a piece of pipe at least 5 feet long and not smaller in diameter than ¾ inch, two pieces of Plexiglas

or similar insulating material, and some machine screws.

Two turns, plus about 6 inches, of the aluminum wire are needed for the driven element. A 6-32 spade lug is slid on to the wire approximately to its centre. The lug is used as one of the supports for the driven element. The wire is bent into the form shown in Fig. 2. A loop of 5/32 inch inside diameter is bent at each open end of the wire.

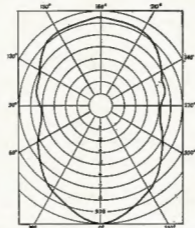


Fig. 1. Field pattern of the Antalo antenna on 143.342 Mc. and at a distance of 1 mile. Gain figures are in reference to a standard halo.

An insulating mounting plate for the driven element is made by cutting and drilling a piece of ¼-inch Plexiglas sheet as shown in Fig. 3. The element is attached to the insulator with the spade lug at the upper ¼-inch hole, and 8-32 machine screws through the terminal loops of the wire at the bottom pair of holes, as indicated.

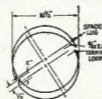


Fig. 2. The driven element is made of ¼-inch aluminum clothesline, bent to form a double loop with a gap at the front.

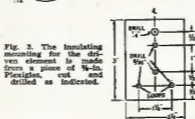


Fig. 3. The insulating mounting for the driven element is made from a piece of ¼-inch Plexiglas, cut and drilled as indicated.

A spacer is cut from ¼-inch Plexiglas rod to fit between the folded ends of the driven element, as shown in Fig. 4. A similar spacer could also be made from ¼-inch sheet material if the rod is not available.



Fig. 4. The spacing insulator for the driven element may be made from a piece of rod or sheet of Plexiglas or other good insulating material.



Fig. 5. The parasitic rings are also of ¼-inch aluminum clothesline, flattened at the centre for mounting, as shown in the detail.

For the parasitic elements, 16 rings of the aluminum wire with a 1-inch gap are cut as shown in Fig. 5. A flat spot is hammered in the wire at a point diametrically opposite the gap, and drilled as indicated in the detail sketch.

The top end of the pipe mast is drilled and tapped according to Fig. 6. The three larger holes are for mounting the driven element with its Plexiglas insulator. The parasitic elements are attached directly to the mast without

(Continued on page 7)

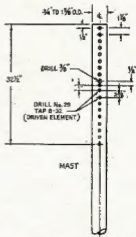


Fig. 6. Sketch showing drilling pattern of the mast. Except as indicated, holes are made with a No. 43 drill and tapped for 4-40 machine screws, and are spaced 1½ inches apart. The mast section should be of aluminum or steel, and at least 5 feet long.

* Reprinted from "QST," December, 1964.

MODIFICATION OF BENDIX COMPASS RECEIVER

REV. BRO. P. L. ELLIS*

The changes were devised to obtain maximum selectivity from the set which has one stage of i.f. amplification at 110 Kc. The idea of the cathode follower was gleaned from an article in "Electronics World" dealing with noise suppression, and the voltage doubler detector will be familiar to readers of "Radio Television and Hobbies."

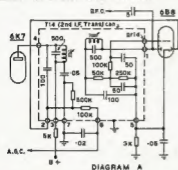


DIAGRAM A

By inspection of the original circuit (diag. A) one will notice that the primary of the last i.f. transformer is loaded by the a.g.c. diode and its network of resistors, while the secondary serves the usual audio diode. This loading causes the "Q" of the transformer to be considerably reduced, with adverse effects on the set's selectivity.

Diagram B shows modifications to lessen these effects. The a.g.c. circuitry is removed from the primary and the secondary is fed to the grid of the

* St. Patrick's College, Goulburn, N.S.W.

cathode follower. The effective input impedance of this unit is extremely high, thus avoiding the heavy damping of the original circuit components.

The r.f. choke is a home-made unit. The coils from two old capacitor-tuned i.f. transformers were used. These were wound on solid wooden formers. The formers were drilled through their centre, and so cut, that the four windings could be assembled on a thin wooden shaft, and spaced something less than 1" apart. By joining the coils in series a choke with an inductance of several times greater than 2.5 mH. was available. This value was considered advantageous as the i.f. to 110 Kc.

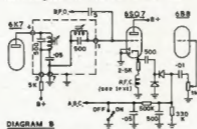


DIAGRAM 9

The voltage doubler detector more than compensates for any losses inherent to the cathode follower. By correct orientation the germanium diodes of the detector will produce a negative d.c. voltage across the audio load and this can be used as the a.c.c. voltage.

The b.f.o. injection now goes to the grid of the cathode follower. It was found necessary to earth the a.g.c. line when listening to c.w. or s.s.b. as the

a.g.c. considerably reduced sensitivity when the b.f.o. was active.

The component values shown in the circuit may not necessarily give optimum results. They were used simply because they were on hand and worked. Nevertheless, the cathode follower is the significant unit in the modifications, and the improved selectivity was obvious on first trial of the receiver. Needless to say I have no "selectivity figures" to offer; but the results were well worth the modicum of work required.

—Rev. Br. P. L. Ellis.

☆

Technical Correspondence— RE LOW NOISE FIGURE CONVERTER FOR 2 MX

Editor "A.R." Dear Sir,

The footnote to my article "A Low Noise Figure Converter for Two Metres" states that the addition of a second GE7077 grounded grid amplifier lowered the noise figure of the converter from 4.5 db. to 2.5 db. In order to alleviate any bewilderment about this statement an explanation may be considered necessary.

It may seem paradoxical that the addition of an identical amplifier stage should improve the noise figure so markedly, but it should be noted that the overall noise figure depends on not only the r.f. amplifier noise figure but also on the mixed noise figure.

The formula for this relationship is:

$$F_{\text{TOTAL}} = F_1 + \frac{F_1 - 1}{\Omega}$$

where F_{TOTAL} is the overall noise factor

F_1 is the noise factor of the first stage (in this case the r.f. stage).

F_2 is the noise factor of the second stage (the mixer).

Note also that Noise Figure = $10 \log_{10}$ noise factor.

It can be seen that if F_1 , the mixer noise factor, approaches or exceeds the power gain of the r.f. stage G_1 , the overall noise factor will be degraded. This was in fact what happened with only one r.f. stage. Addition of a second r.f. stage will increase G_1 , thereby reducing the term $(F_1 - 1) / G_1$ to a negligible amount, bringing the overall noise factor of the converter very close to the noise factor of the r.f. stage alone.

After completion of the converter, and the measurement of the n.f. it is apparent that if a grounded cathode r.f. stage had been used to obtain a higher power gain an improved noise figure on 4.5 db. would have been obtained for the single r.f. stage. However, it would appear that the application of valves for this type of equipment is nearing an end with the availability of v.h.f.-u.h.f. type transistors, and the local oscillator. An excellent article introducing this "new look" in converters appeared in August '65 "A.R."

—C. J. Hurst, VKSHJ.

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AMATEURS TO PLAY HOST TO THE YOUTH OF THE WORLD

During the week end of October 16-17, Radio Amateurs from 70 countries will open up their "Ham shacks" to members of the Boy Scouts' and Girl Guides' Associations for the Boy Scouts' International 8th Jamboree-on-the-Air.

Since 1965 is International Co-operation Year, organised by the United Nations, the Boy Scouts World Bureau proposes to dedicate this year's Jamboree-on-the-Air to international co-operation and goodwill. The commencing date, 16th October, is particularly appropriate, as it has been selected by the Food and Agriculture Organisation of the U.N. for their "Mobilisation of Youth Appeal" in connection with the Freedom from Hunger Campaign.

If you are one of the "300 plus" Australian Amateurs who were able to give a few hours of your time to help these young people last year, then you are no doubt looking forward to this year's "event" as eagerly as they.

If you have not participated in Jamboree-on-the-Air before may I suggest you give it a go. An adult Scouter will be in charge of each Group and he will arrange a roster of Scouts and Guides to visit your "shack" over the week end at times to suit you, and in groups depending upon the size of your "shack."

The Rules are very simple and were explained in the September issue of "A.R." The call sign is "CQ Jamboree" or on c.w. "CQ Jam."

This is not a contest and there are no prizes given for the most contacts although a participation certificate will be issued by the Boy Scouts' Association to every Amateur and Youth Group who send in a log of stations and Scout Groups contacted to Jamboree-on-the-Air Branch Organiser, c/o Boy Scouts H.Q. of your own particular State. Log sheets and all other relative information are available from any Scout Group.

In past years many Short Wave Listeners have participated in Jamboree-on-the-Air. They, too, will receive a participation certificate if they send in log of stations and Scout Groups heard during the week-end.

We are particularly interested in receiving photographs of your station rig with Scouts and Guides participating in Jamboree-on-the-Air to forward to the World Scout Bureau in Canada.

Last year a photograph of a Victorian Scout Group participating by the courtesy of a Victorian Amateur, VK3AHJ, was chosen as the front cover piece for the 8th Jamboree-on-the-Air World Report which was sent to the 70 different countries around the world who took part in this "event."

This was great publicity for both the Australian Radio Amateur and the Australian Boy Scouts' Association.

So let us, the Radio Amateurs of Australia give these young people the opportunity to talk and make friends with other young people throughout Australia and the world and introduce them to our hobby of Amateur Radio and Electronics.

—Jack Nicholson (VK3AAN),
Victorian Branch Organiser,
Boy Scouts Association.

RESULTS ON 2 MX F.M.

(Continued from page 3)

If you can obtain 20 db. of noise reduction with a 0.5 μ V. input signal then your work has not been in vain and you will easily read that weak signal.

The presence of vibrator hash, ignition or impulse type noise indicates that your receiver is not operating correctly. It should be possible to operate f.m. gear of this type in extremely noisy locations without suppression where "a.m." contacts would be impossible.

It is relatively easy to operate this type of equipment from a.c., but there are several points to keep in mind. The receiver should not have more than +170v. of h.t., but more could be applied to the transmitter. The p.t.t. relay requires a low d.c. voltage, this could readily be obtained with a silicon rectifier from the filament supply. The accompanying circuit (Fig. 4) answers all points quite nicely but be sure that R1 (Fig. 4) will dissipate the power adequately and when transmitting, there is not excessive dissipation in the p.t.t. relay coil.

Remember, that this carbon microphone voltage is derived from the h.t. —ve., so care must be taken to prevent power supply hum from getting into the audio.

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145.854 Mc.
146.000 Mc.
146.146 Mc.
435.000 Mc.

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Control Unit	Tx/Rx
1.—L.t. active	1.—Tx. fls.
2.—Trans. control	2.—Rec. fls.
3.—Rec. control	3.—Channel s/w.
4.—Output common	4.—Mute
5.—3 ohm spkr. output	5.—Output common
6.—Spare	6.—3 ohm output
7.—Mic. active	7.—Bias
8.—P.t.t. control	8.—P.t.t. relay
9.—Rec. h.t. plus 150 v.	9.—Trans. h.t. plus 300 v.
10.—Bias	10.—Rec. h.t. plus 150 v.
11.—Mute control	11.—Mic. active
12.—Earth	12.—Mic. supply

CONCLUSION

Don't despair about f.m. as all you have to do here in VK3 is to barely get on the air and there are least 100 experts willing to help.



THE ANTALO

(Continued from page 5)

insulation. These elements should not be mounted until the driven element has been adjusted.

ADJUSTMENT

A 2-metre transmitter of the 2- to 5-watt variety is desirable as the signal source, and an "in-the-line" type of standing-wave indicator should be inserted in the RG-8/U transmission line to the driven element. Adjust

the transmitter frequency to the centre of the desired range. The spacing between the open ends of the driven element is then adjusted for minimum reflected power. When this adjustment has been found, "Q Dope" is applied to the Flexiglas spacer to fix the spacing at this point. The parasitic elements should be mounted now, and the gap spacing of each element adjusted for minimum s.w.r., starting with the elements closest to the driven element and working outward from there.

The author wishes to express his thanks to W8DQR, W4ZNV and K8TGH for their assistance, and W8UPB and W1CPC for their encouragement.



NEW CALL SIGNS

JUNE, 1965

VK3ZU—J. H. Fraser, 4 Cropley Street, Rhodes.
VK3AA—R. F. Woolley, King's Road, Federal.
VK3AQ—A. Milner, 2 Elouera Road, Avalon Beach.
VK3AV—P. F. Goldsbrough, 16 Duke Street, East Gosford.
VK3JD—J. M. Bennett, Married Quarters 13, Victoria Barracks, Paddington.
VK3ZM—W. McWhorter, 18 Abercree Road, Cessnock.
VK3ZPS—P. J. Vanderlinden, 20 Yanko Avenue, Wyvay.
VK3BCP—J. P. Cork, Glenview, Wollombi.
VK3AF—J. F. Ferguson, 91 Surrey Road, South Yarra.
VK3ZEW—J. L. Jones, School of Radio, R.A.A.F. Base, Laverton.
VK3ZGT—A. J. Johnson, 45 James Road, Fintona Gully.
VK3ZIL—A. R. McDonald, 38 Thompson Street, Sale.
VK3ZOF—Rev. J. M. O'Kelly, St. Joseph's Presbytery, Warragul.
VK3ZSP—G. L. Porter, School of Radio, R.A.A.F. Base, Laverton.
VK3ZWP—W. B. Pywell, 28 Laing Street, Mont Albert.
VK3ZW—W. K. Slater, 44 Fowler Street, Colours.
VK4ZLO—L. A. Davies, 14 Neelins Street, Dorrington, Brisbane.
VK3MM—L. E. McKenzie, 3 Eric Avenue, Black Forest.
VK3NT—N. Tebbett, 14 Willingale Avenue, Lockleys.
VK3PT—Third Goodwood Radio Club, 51 Frederick Street, Clarence Park.
VK3ZBP—R. G. Henderson, 23 Andrews Road, Elizabeth Downs.
VK3ZBK—E. J. Kenny, 53 Penno Parade, Belair.
VK3ZDV—R. K. Von Sander, 19 Herbert Street, Plympton Park.
VK3ZWG—G. N. Wicker, Station: 61 Swaine Avenue, Rose Park; Postal: 7 Philpott Avenue, Paradise.
VK3DI—B. J. Burns, 887 Kinner Place, Rapid Creek, Durbin.
VK3LV—Christian Brothers College, Franklin Street, Leederville.
VK3ZBP—P. R. Beck, 1 Hawson Street, Subiaco.
VK3ZEV—M. J. Veinagel, 233 Mill Point Road, South Perth.
VK3ZFP—M. H. Baker, 8 Gunee Road, City Beach.
VK3ZFC—R. J. Campbell, 3 Hardy Street, North Perth.
VK3ZFS—N. D. Stephen, 34 Dunblane Road, Florent Park.
VK3ZBL—B. Kelly, 29 Park Street, Wynyard.
VK3ZPP—P. J. Dore, 77 Talbot Road, Launceston.
VK3ZMW—M. A. Wood, Walton Street, Huonville.
VK3KZ—R. J. Geeves, 47 Bowden Street, Glenorchy.
VK3FE—F. Earley, C/- Box 301, Rabaul, T.P.N.G.
VK3TB—E. W. Barlow, 8 Agos Street, Port Moresby.
VK3ZEV—C. W. Schulz, C/- Posts and Telegraphs, Rabaul, T.P.N.G.



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CONTEST CALENDAR

- 2nd/3rd October:—
VK/ZL Oceania. Contest—Phone Section.
W.A.D.M. Contest—C.W.
- 9th/10th October:—
VK/ZL Oceania. Contest—C.W. Section.
- 10th/11th October:—
Fourth R.S.G.B. 7 Mcs. DX Contest Phone Section.
- 23rd/24th October:—
CQ World Wide. DX Contest—Phone Section.
- 23rd/24th October:—
VU2/457 DX. Contest—Phone Section.
- 30th/31st October:—
VU2/457 DX. Contest—C.W. Section.
- 6th/10th November:—
Fourth R.S.G.B. 7 Mcs. DX Contest—C.W. Section.
- 27th/28th November:—
CQ World Wide. DX Contest—C.W. Section.
- Mid December/Mid January:—
Ross A. Hall Memorial Trophy. V.H.F. Contest.



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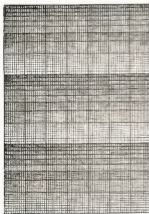
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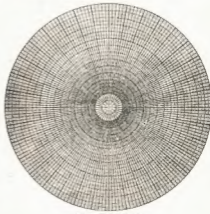
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ONE-TRANSISTOR TOP BAND CONVERTER*

TO WORK WITH ANY MEDIUM-WAVE RECEIVER

B. J. P. HOWLETT, G3JAM

OF the three main points at which one can have the local oscillator to convert the 160 m. band to medium wave, namely:

- (1) Oscillator above signal frequency;
- (2) Oscillator above IF but below signal; or
- (3) Oscillator below IF and below signal.

The writer believes that the most difficult is the first case. Besides giving reverse tuning, the 2nd channel lies near the 49 m broadcast band, full of high power transmissions, and short-wave breakthrough could become a severe problem.

The choice seems to lie between Case No. 2 and Case No. 3. Taking some typical values:

	No. 2		No. 3	
Osc.	1100 Kc.	950 Kc.	890 Kc.	800 Kc.
IF	700-900 Kc.	850-1050 Kc.	1000-1200 Kc.	1200-1400 Kc.
2nd Ch.	300-400 Kc.	100-150 Kc.	300-400 Kc.	600-800 Kc.

Number 2B is definitely out, and one can look at it two ways. The IF range includes the oscillator frequency. Alternatively, the 2nd harmonic of the oscillator falls in the 160 m. band. In fact any oscillator frequency between 900 and 1000 Kc. is automatically ruled out. However, frequencies HF of this are quite in order up to about 1250 Kc. when the main receiver will reach the LF end of the band coverage.

No. 3B itself is workable, just. The third harmonic of the oscillator falls at 1.8 Mc. and the 2nd harmonic at its IF equivalent. Oscillator frequencies between 600 and 887 Kc. are out for the same reason—harmonic falls in the band. And that leaves a broad section 667 to 900 Kc. in which to play around, so Case No. 3A is near-enough in the middle of the optimum section.

It is fortunate for Londoners that the corresponding IF range does not include any powerful local stations; other parts of the country may not be so lucky.

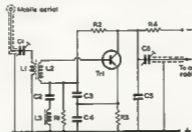
The writer has actually tested using all the investigated possibilities, and has confirmed all the possible reasons for rejection. As a result, 820 Kc. was chosen for the local oscillator, giving a tuning range of 980-1180 Kc. (2nd channel 360-480 Kc., which admittedly includes Droitwich, but this station is no problem in S.E. England).

CIRCUIT

The great care in choosing the IF range was well worth the trouble, as only a single OC44 frequency changer was required in the end, connected in a Clapp circuit with high-Q coils knocked up with 34 g. wire on cast-off fragments of rod aerial ferrite! It was found important to avoid diffused-junction transistors of all kinds, for two reasons:

In the first place, it is desirable not to have any gain on short waves proper; and if there is no appreciable gain at higher frequencies there is less tendency for the oscillator waveform to become distorted. The local oscillator was adjusted so that it starts readily but gives near enough a sine wave on an oscilloscope.

Stage gain is slight, but the frequency change action introduces very little noise, and when used with a good centre-loaded whip a Pye hybrid type car radio sounded just like a proper Top Band receiver. Matching out is done with C1 and matching in with C6. The series-tuned input greatly improved reception when used with the regular car aerial but performance is not very impressive under those conditions.



Circuit of the transistor converter described by G3JAM. The choice of local oscillator frequency and the IF is discussed in the text. This simple arrangement will enable almost any medium-wave receiver—car radio, transistor portable or domestic BC set—to give coverage over the 160-metre Amateur band.

- C1—20 pF. Philips trimmer.
C2—0.001 µF.
C3—C4—0.005 µF.
C5—100 pF comp. trimmer.
R1, R2, R3—2,700 ohms.
R4—15,000 ohms.
T1—OC44, or similar.

Notes: For L1 and L2 use single-layer winding on off-cuts of ferrite-rod aerial material, adjusting turns experimentally. For L3 3 turns of insulated wire over-wound on L1.

Used in the home station with the same centre-loaded whip, but working into a CR-100, it was extremely difficult to tell when the converter was in use, so the comparison had to be by listening carefully for MW breakthrough. There is a little such down in the South-East, the strongest being Hilversum III. (Since writing this, one of the D.I.Y.S. stations has appeared in that section of the MW band!)

The writer would like to add that the input tuning does not have to be removed when using a centre-loaded whip; two series tuned circuits in series with one another still tune to the same frequency—the better one virtually takes charge. In fact, it all helps in keeping out unwanted QRM.

CONCLUSION

Writing in the past tense does not imply that the unit no longer exists.

It was built for and is used by a friend—the writer has no vehicle. Sturdy construction and secure bonding of earths will help to make the unit long-lived and reliable whether used on a 9-volt dry battery (consumption 0.8 mA.), or on the 12-volt car battery (consumption just over a milliamp).

On the car battery, consumption is so small that it is hardly worth the effort of fitting a switch!

LOW DRIFT CRYSTALS FOR AMATEUR BANDS

ACCURACY 0.01% OF
STATED FREQUENCY

3.5 and 7 Mc.

Unmounted, £2/10/0

Mounted, £3/0/0

12.5 and 14 Mc.
Fundamental Crystals,
"Low Drift"
Mounted only, £5.

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Prices on Application.

Regrinds £1/10/0

MAXWELL HOWDEN
15 CLAREMONT CRES.,
CANTERBURY, E.7,
VICTORIA

*Reprinted from "The Short Wave Magazine," February 1965.

ROSS HULL MEMORIAL V.H.F. CONTEST, 1965-66

The Federal Contest Committee of the Wireless Institute of Australia invites all Australian and Overseas Amateurs and Short Wave Listeners to participate in this annual Contest which is held to perpetuate the memory of Ross Hull whose interest in v.h.f. did much to advance the art.

A Perpetual Trophy is awarded annually for competition between members of the W.I.A. in Australia and its Territories, inscribed with the name and life's work of the man whom it honours. The name of the winning member of the W.I.A. each year is also inscribed on the Trophy. In addition, this member will receive a suitably inscribed certificate.

Objects: Australian Amateurs will endeavour to contact as many other Amateurs in Australia and Overseas under the following conditions:

Date of Contest: From 1401 hrs. G.M.T., 11th December, 1965, to 1359 hrs. G.M.T. 16th January, 1966.

Duration: Any consecutive 216 hours (9 days) within the dates mentioned above, this period to be at the choice of the operator.

RULES

- There shall be three main sections to the Contest:
 - Transmitting, Open, 52 Mc. and higher;
 - Transmitting, Phone, 52 Mc. and higher;
 - Receiving, Open, all bands, 52 Mc. and higher.
- All Australian and Overseas Amateurs may enter for the Contest whether their stations are fixed, portable or mobile. If portable or mobile operation is used, this to be stated, giving the general location of such operation.
- All Amateur v.h.f. bands may be used, but no cross-band operating is permitted. Operators are cautioned against operating transmitting equipment on more than one frequency at a time, particularly when passing cyphers. Such operation may be grounds for disqualification of a contestant.
- Amateurs may enter for any of the transmitting sections.
- Only one contact per band per station is allowed each calendar day.
- Only one licensed Amateur is permitted to operate any one station under the Owner's call sign. Should two or more operate any particular station, each will be considered a con-

testant and must submit a separate log under his own call sign.

7. Entrants must operate within the terms of their licences.

8. **Cyphers:** Before points may be claimed for a contact, serial numbers must be exchanged and acknowledged. The serial numbers of 5 or 6 figures will be made up of the RS (telephony) or RST (c.w.) report plus three figures commencing from 001 for the first contact and will increase in value by one for each successive contact. If any contestant reaches 999 he will start again with 001.

SCORING TABLE					
Distances Between Stations	52 Mc.	144 Mc.	432 Mc.	576 Mc.	Higher
Up to 10 miles ..					
Over 10 and up to 25 miles			1	2	5
Over 25 and up to 50 miles			2	5	10
Over 50 miles and up to 100 miles ..	2	1	5	10	15
Over 100 miles and up to 200 miles ..	5	5	10	15	20
Over 200 miles and up to 300 miles ..	10	5	15		
Over 300 miles and up to 500 miles ..	5	10	20		
Over 500 miles and up to 1000 miles ..	1	15	30		
Over 1000 and up to 1500 miles	1	20			
Over 1500 and up to 2500 miles	5	30			
Over 2500 and up to 3500 miles	10				
Over 3500 and up to 5000 miles	15				
Over 5000 miles ..	20				

9. Entries must be set out as shown in the example, using only one side of the paper. Entries must be postmarked not later than the 14th February, 1966, and clearly marked Ross Hull Contest, and addressed to **Federal Contest Manager, Box N1002, G.P.O., Perth.**

10. Scoring for all sections will be based on the attached table. Contestants will have to agree between themselves as to the distance between their stations. Such distances must be shown in the log entry as shown in the example. Failure to make this entry will invalidate the particular claim. Some typical distances are given in the attached table.

11. **Log:** All logs shall be set out as in the example and in addition will carry a front sheet showing the following information.

Name Call Sign
 Address Section
 Claimed Score

Operating period:
 From hrs. G.M.T. / /
 to hrs. G.M.T. / /
 i.e., 9 consecutive days.

Highest score over a 48 hours period was points.

Operating period:
 From hrs. G.M.T. / /
 to hrs. G.M.T. / /

Declaration: I hereby certify that I have operated in accordance with the Rules and Spirit of the Contest.
 Signed
 Date

Note: Entries on the front sheet must be clearly shown in block letters.

12. The right is reserved to disqualify any entrant who, during the Contest, has not observed the regulations or who has consistently departed from the accepted code of operating ethics.

13. The ruling of the Federal Contest Manager of the W.I.A. will be final. No dispute will be entered into.

14. **Awards:** Certificates will be awarded to the winners of each section in each VK and Overseas Call Area. The VK contestant who returns the highest score in the transmitting section and who is a financial member of the W.I.A. will have his name inscribed on the Trophy which will be held by his Division for the prescribed period. His Certificate will be suitably inscribed. In addition a special certificate will be awarded to the Contestant, who shall not be the Trophy winner, and who returns the highest scoring log covering a period of any 48 consecutive hours (2 days) within the contest duration, such period to be nominated by the contestant. This period must be within the duration of the contest, but need not be within the main 9-day period. The period chosen must be stated on the front sheet—refer Rule 11.

RECEIVING SECTION

1. Short Wave Listeners in Australia and Overseas may enter for the Contest, but no transmitting station may enter.

(Continued on next page)

EXAMPLE OF TRANSMITTING LOG (Brisbane Station)

Date/Time G.M.T.	Band Mcs.	Emission	Power	Call Sign	RST/No. Sent	RST/No. Rcvd.	Dist. Miles	Points Claimed
26th Dec 0100 G.M.T.	52	A3 (a)	50 watts	VK7ZAI	59001	30004	1110	1
0230 G.M.T.	52	A3	50 watts	VK4NG	59002	57051	330	5
0239 G.M.T.	144	A3	150 watts	VK2ZK	59003	55043	900	15
0239 G.M.T.	144	A3	150 watts	VK2ZJQ	45004	40021	850	15

EXAMPLE OF RECEIVING LOG (Perth S.w.I.)

Date/Time G.M.T.	Band Mcs.	Call Heard	RST/No. Sent	Station Called	Distance Miles	Points Claimed
2nd Jan. 1000 G.M.T.	52	VK5ZDX	59221	VK5KK	1330	1
1025 G.M.T.	52	VK5ZCF	58195	VK5ZAA	2040	5
1110 G.M.T.	432	VK5ZDS/6	57061	VK5LX/6	90	5
3rd Jan. 0500 G.M.T.	144	VK5ZHL	44109	VK5ZCN	1330	20

Correspondence

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publishers.

COST OF OVERSEAS EQUIPMENT

Editor "A.R." Dear Sir,
I sincerely trust that this letter will not be considered in the light that I am "having to go" at any particular agent or importer, but rather that of someone seeking genuine information on the price difference of Radio Material in their country of manufacture and that obtaining here.

When visiting England last year I was privileged to go through the works of Messrs. K. W. Electronics, at Dartford, and was given leaflets, etc., covering many of the pieces of equipment I saw being manufactured, and would like to take as an example the price difference between England and Australia of their K.W.2008 Transceiver, for which I give the following figures:

Price in England, with Sales Tax:	
K.W.2008 Transceiver	£170
Power Supply Unit, a.c. or d.c.	£25
Total cost	£195

Equivalent Price in Australia £s. £113 10 0	
Power supply unit, a.c. or d.c.	£25 5 0
Total cost	£138 5 0

Importer's Sale Price in Australia £237 12 6	
Power Supply Unit, a.c. or d.c.	£56 7 6
Plus 18 1/4% Sales Tax	£49 5 0
Total Cost	£343 5 0

Do not let us overlook that the English prices quoted does have their Sales Tax included and when exported this Sales Tax is not applicable. Assuming that the Sales Tax in England is 18 1/4% it would appear that the total retail export price would be in the region of £237/10/- Australian £s. But let us not forget that the importers do buy at wholesale prices, which would, I feel, include a fair and reasonable profit for them.

It would be most interesting to hear the importers' answer to the question of how the cost to the public of this piece of gear more than doubles itself on its journey. The further information as to shipping costs, insurance and import duty would of course be a clear pointer as to where the difference lies.

Whilst one is quite prepared to pay a reasonable price for an article one does rather balk at price differences of this nature, and one can only assume that the unfortunate purchaser of Radio Equipment, at this margin of difference between wholesale and retail sale, does so in ignorance of its original cost.

Please accept my assurance that I am in no way connected with any Import or Radio business in any way and am merely seeking to have, what is to me an inexplicable mystery, explained.

—C. Whalley, VK5KX.

R.D. SCORING

Editor "A.R." Dear Sir,
On the eve of the 1965 R.D. Contest it is appropriate to query the reason for the Contest Committee's denying VK1 an independent scoring status.

As the reason seems to defy logical deduction, an explanation would be of interest. Rightly or wrongly, VK1 is a separate call area covering a population of 80,000 plus. It is home to more Amateurs than VK3, 8 and 9 combined and is a very real and legitimate part of the same basis for scoring as every other Division.

Perhaps the committee can explain? If there is no reasonable explanation, the scoring table for next year should be revised.

—Col. Harvey.

SWITCH

TO SAFETY



2. Contest times and logging of stations on each band are as for the transmitting sections, however, there is no 48 hours sub-section.

3. To count for points, logs will take the same form as for transmitting sections but will omit the serial number received. Logs must show the call sign of the station heard (not the station worked), the serial number sent by it, and the call sign of the station being worked.

Scoring will be on the same basis as for transmitting stations, i.e., on the distance between the Listener's station and the station heard. See the examples given. It is not sufficient to log a station calling CQ.

4. A station heard may be logged only once per calendar day on each band for scoring purposes, but additional reports will be of value to the F.C.M.

5. Awards: A certificate will be awarded to the highest scorer in VK. Other certificates may be awarded by the Federal Contest Manager depending on conditions and activity.

GENERAL NOTES

The contest period has been altered in line with suggestions made by many

contestants and an extra certificate will be awarded for the best score over a 48-hour period in accordance with a motion passed at the 1965 Federal Convention. However, the 9-day winner is not eligible for the 48-hour award. Also changes have been made in the Scoring Table to accommodate some of the alterations suggested by the VK6 Division at Federal Convention.

Since only a small number of logs are received for the Receiving Section, only one Certificate will be awarded this year unless extra activity warrants otherwise.

It is suggested that contestants obtain a large-scale map of Australia and of their State and measure out the distances involved in contest contacts that are not given herein.

Contestants are reminded that times must be shown in G.M.T. in accordance with Institute policy to foster the use of G.M.T. where practicable. Failure to observe this rule will be grounds for disqualification.

Comments concerning the Contest, with particular reference to: Duration of Contest, Points Scoring System, Rules of Contest, would be appreciated by the Federal Contest Manager.

DISTANCE TABLE

	Syd.	Canb.	Bris.	Melb.	Hob.	Adel.	N. Zee.	Dar.	Perth
Sydney	0	180	460	460	660	710	1300/	1950	2040
Canberra	180	0	600	290	530	670	1300/	1930	1940
Brisbane	460	600	0	860	1110	980	1500/	1790	2240
Melbourne	460	290	860	0	400	400	1500/	1930	1720
Hobart	660	530	1110	400	0	710	1300/	2280	1880
Adelaide	710	670	990	400	710	0	1900/	1620	1330
New Zealand	1300/	1300/	1500/	1500/	1300/	1900/	0	2550	3000/
Darwin	1500	1500	1790	1700	1500	2100			3200
Perth	2040	1940	2240	1720	1880	1330	3000/	1650	0

A EI's WORTH OF TAPE TOOK THE PHOTOS OF MARS

A length of "Scotch" magnetic recording tape worth about \$A1 was used on July 14 to send home to the world photographs of the planet Mars.

Martiner Four, the spacecraft which was on schedule when it flew past the red planet had travelled 36 million miles since it was launched last November. Aboard the vehicle, 138,000 components had functioned for some 3,500 hours in space.

Such industrial firms as North American Aviation, General Electric, Lockheed Missiles and others were included on the list of Martiner's contractors. More than 60 sub-contractors provided 21 million dollars worth of hardware and instruments. More than 1,000 others provided another 18 million dollars worth of procurements.

But in the end Martiner Four's photographic success depended on the ability of that one strip of magnetic tape—thinner than a razor blade, and not quite as wide as a pencil—to record and faithfully reproduce photographs. The tape was 3M Company's "Scotch" Brand Instrumentation Tape, which was also used in Ranger Eight and Ranger Nine to record and reproduce thousands of photographs of the Moon.

As Martiner Four passed within about 5,600 miles of Mars, a single television camera took 21 still and 16 motion pictures. Two at a time, the pictures were stored on the tape in digital

form for later playback. This was necessary because, while picture data is recorded at 10,700 binary digits (bits) per second, the radio transmission rate from Mars is an extremely slow 4.83 bits per second. The slow transmission is needed to achieve reasonable picture quality over the 150 million miles (241,397,000 kilometres) of communications distance.

Tape length was held to 330 feet (100.594 metres) by the recorder's ability to operate at the extremely slow speed of one one-hundredth of one inch (0.0254 cm.) per second. The unique recorder, built by Raymond Engineering Laboratory Inc. (of Middletown, Connecticut, U.S.A.) was turned off after recording each pair of pictures and was turned on again to record the next pair.

The instrumentation tape used in the spacecraft and on the ground recorders was designed to withstand severe heat. During manufacture of the Martiner Zepco, 3M engineers passed them through 63 specific tests and later subjected them to 35 more.

Playback of the pictures—which took 8 hours 20 minutes for each picture—began 12 to 15 hours after the last picture was taken. Back on Earth, the telemetry transmission of the photographs and engineering information was received on much the same kind of 3M tape. A 3M Minocor recorder/producer was among other ground equipment, to record transmissions from the spacecraft. Photographs were reproduced by running the ground recorded tape through a video kinescope system in which the same name and view of Mars pictures were processed.

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By Phil Williams VK5NN

SCREEN SUPPLY FOR A MULTI-TUBE LINEAR AMPLIFIER

HT 541.

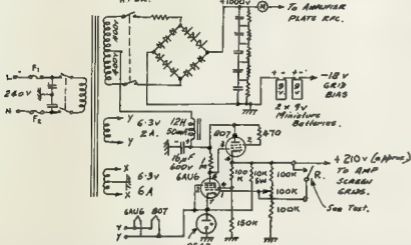


Fig. 1.—"Tetra Linear" Power Supply incorporating regulated screen grid supply and battery bias.

During the renovations the bias supply was the first to be treated, and two cheap transistor radio 9 volt batteries were obtained from the local chain-store food market. These have not shown signs of wilting in 15 months of service and a quick test in a radio showed that they are still quite good on load. A grid current test with the linear at half plate voltage showed that bias voltage is maintained.

It is interesting that Max VK6DA is using a similar screen regulator, which has given me a chance to "taste the difference" in my receiver. There is a difference—quite a worthwhile improvement.

Next month's Sideband notes will deal with the post-phasing amplifiers, and conclude with notes on adjusting phasing exciters. This will conclude the series on phasing generators.

79 for now, Phil GNN.

AN IMPROVED TEACHING S.O.B. GENERATOR TITLE

The r.f. phase shift bridge circuit, balanced modulators and output combining circuits are mounted on a small piece of matrix board about 4 in. x 3 in. Mounting is behind or below the two balance potentiometers which are side-by-side on the front panel or chassis as you wish. The pot connections poke through the holes shown approximately with black dots, and the components wired to the circuit diagram in the locations shown on the diagram.

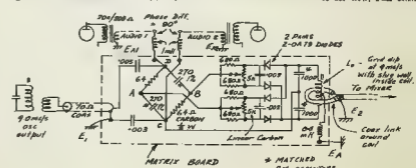


Fig. 2.—8 Mc. Phasing S.a.b. Generator Module constructed on matrix board.

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SPECIFICATIONS:

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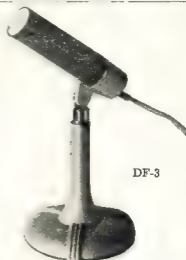
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Plastic Diaphragm. Swivel fits 5/8" 26 t.p.i. Stands.
Size: 4½" long, 1½" diameter. Colour: TWO-TONE GREY.
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Phones: 60-1475--6-7

RULES: 1965 "CQ" WORLD WIDE DX CONTEST—Oct. 23-24, Nov. 27-28

CONTEST PERIOD

Phone: Starts 0000 G.M.T., Saturday, October 23
Ends 2400 G.M.T. Sunday, October 24.
C.w.: Starts 0000 G.M.T., Saturday, November 27
Ends 2400 G.M.T. Sunday, November 28.

BANDS

Contest activity will be in the 1.5, 3.5, 7.5, 14, 21 and 28 Mc Amateur bands.

TYPE OF COMPETITION

1. Single operator.
- (a) All Band.
- (b) Single Band.
2. Multi-Operator, Single transmitter.
3. M.U.-Operator, Multi transmitter.
- (a) Multi-operator will be judged on all band operation only.
4. Inter-Club, (Local DX clubs.)

EQUIPMENT

There is no limit to the number of transmitters or receivers used, and competitors may use the maximum power permitted under the terms of their license.

NUMBER EXCHANGE

1. Phone stations will exchange 4 numerals, the RS report plus their Zone.
2. C.w. stations will exchange 6 numerals the RST report plus their Zone.
3. Stations in Zones 1 through 9 will prefix their Zone number with zero (0), etc.).

POINTS

1. Contacts between stations on different continents will count three (3) points.
2. Contacts between stations on the same continent but not in the same country, will count one (1) point.
3. Exception: Contacts between stations in the North American continent only will count two (2) points.
4. Contacts between stations in the same country will be permitted for the purpose of obtaining a Zone and/or Country multiplier but no QSO points will be credited.
5. Only one contact per band with the same station will be permitted.

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MULTIPLIER

Two types of multipliers will be used.

1. Multiplier of one (1) for each Zone contacted on each band.
2. Multiplier of one (1) for each Country worked on each band.

SCORING

1. The score of each single band will be the sum of the Zone and Country multiplier for that band, multiplied by the total contact points on that band.
2. The total all band score will be the sum of Zone and Country multipliers of all bands, multiplied by the sum of the contact points on all bands.
3. Those sending in logs for a single band will be eligible for a single band award only. If a log is sent in for more than one band, indicate which band is to be judged, otherwise it will be judged as an all band entry.
4. A station will not be eligible for more than one award.

5. Single operator contestants must show a minimum of 12 hours of operating time to be eligible for an award. If a contestant operates on more than one band and wishes to be judged for a specific band, he must show a minimum of 12 hours on that band.

6. Multi-operator stations must show a minimum of 24 hours of operating time to be eligible for an award.

ZONES AND COUNTRIES

The CQ Zone map and the A.R.R.L. and W.A.E. country lists will be used as standards. The former's continental boundaries used for W.A.C. will also be recognized. Should any question arise as to the positive location of a station the official definition will be final.

AWARDS

Certificates will be awarded for each section of the contest as follows:

1. To the highest scoring single operator station in each section.
2. To the highest scoring single operator station on all bands.
3. To the highest scoring multi-operator station in both divisions, single and multi-transmitter.
- (a) In each country.
- (b) Each call area of the United States.
- (c) Each Zone in Australia, Canada and the U.S.S.R.
4. Awards to multi-operator stations will be for all band.

DISQUALIFICATION

Violation of the rules and regulations pertaining to Amateur Radio in the country of the contestant, or the rules of this contest, or unsportsmanlike conduct, or taking credit for duplicate contacts in excess of 3 per cent of the total number of contacts made, will be deemed sufficient cause for disqualification.

LOG REQUIREMENTS

1. In keeping a log, all in Zone number and country, only the RST TIME it is contacted.
2. Use a separate sheet for each band and a tally sheet or report form.
3. Keep all times in G.M.T.
4. All contestants are expected to compute their scores. Logs should be checked for contact duplications and proper point credit before they are submitted.
5. Make sure name and address is clearly noted on each entry, PRINT or TYPE.
6. Each contestant must sign a pledge that all rules and regulations have been observed and that the report is a true one.

If official forms are not available, use a duplicate form as indicated. The size is 8 1/2 x 11 in. with 46 contacts to the page.

2. Copies of the Zone Map, log sheets and report forms are available from CQ, address listed below. Send a large self-addressed envelope, with request, postage in the case of overseas stations, I.R.C. coupons are acceptable. Indicate quantity of sheets required.

ADDRESS

All entries must be post-marked NO LATER than December 1, 1965, for the phone section, and January 15, 1966, for the c.w. section. In rare isolated cases the deadline will be made more flexible. Send logs directly to CQ W.W. Contest Committee, 14 Vandeventer Avenue, Fort Washington, L.I., N.Y. 11550. (Indicate Phone or C.W. Section.)

VK RESULTS IN THE 1964 "CQ" W.W. CONTEST

Phone—Single Operator.

	Hand	Score	QSO Zones	Countries
*VK1KHM	11	16,538	31	21
*VK2APK	14	93,556	325	38
VK2WJ	14	15,458	94	26
VK2AKA	14	12,553	101	27
*VK3ATN	A	132,053	601	67
*VK3JTL	14	40,362	162	33
VK3HL	14	17,957	106	24
VK3KX	7	1,853	28	9
VK3KX	7	350	20	4

C.W.—Single Operator:

*VK2WJ	A	323,050	941	67	108
VK2PV	A	58,776	217	38	85
VK2RA	A	2,256	32	13	18
*VK2APK	14	116,962	244	36	71
*VK3JTL	A	49,476	243	33	39
VK3JTL	A	10,357	66	23	37
*VK3RJ	21	8,612	94	15	31
*VK3ANB	7	13,850	170	13	18
*VK3KX	3.5	1,443	48	7	8
*VK4SS	A	1,850	35	20	27
*VK4SS	A	16,527	131	20	27
*VK4SD	14	15,181	114	19	23
*VK5TC	A	87,498	384	37	53
*VK5WC	A	13,354	95	23	30
*VK5KO	1.8	5	1	1	1
*VK5TM	A	82,038	240	38	53

C.W.—Multi-Operator, Single Transmitter:

*VK5FV/VK5NO	914,762	1188	91	178
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Note.—Certificate winners are indicated by *.



VU2/457 DX CONTEST '65

The Amateur Radio Society of India and the Radio Society of South Africa have arranged stations in all parts of the world to participate in the second VU2/457 DX Contest. The object of this contest is to work as many VU2 and 457 stations as possible during the two week-end.

The contest periods are: Telephony, October 23 and 24; C.W., October 27 and 28. The operating time in each instance is 0900 G.M.T., Saturday, and the finishing time 0000 G.M.T. Sunday.

There shall be three main sections to the Contest: (a) Transmitting—telephony, (b) Transmitting—c.w.; (c) SWL—phone and c.w. Only Amateur frequency bands may be used but no cross band operation is permitted. Stations entering both sections must submit separate logs.

The serial number will comprise RS or RST report plus three figures, which may begin with 991 for the first contact, and which will increase in value by 1 for each successive contact.

Scoring For DX stations other than VU2/457: Two points for each contact on a specified band with VU2/457 stations and one point for each contact on a specified band with the rest of the world.

For DX Stations: (a) Logs should contain date, time G.M.T.; (b) call signs of stations contacted, band, serial no., sent, serial no., received; (c) DX points. Only the serial number for each band. (d) The summary sheet should show call sign, name (in block capitals) and the number of contacts. (e) A separate sheet showing total points for all bands. Sign the declaration that rules and regulations were observed.

Log and accompanying summary sheets should be sent to: The Radio Society of Cayton, Contest Committee, P.O. Box 907, Colombo, Ceylon and should be post-marked not later than November 30, 1965.

Awards: DX Stations: Certificates will be awarded to each country (call area, W/K JA, SM, UA, VK, ZL, etc.) on the following basis. (a) Top scorer using all bands; (b) top scorer using one band, (c) to those with minimum contact requirements, to be determined by conditions and activity prevailing.

SWL Section: This section is open to all members of any SWL Society in the world. The rules are the same as for the transmitting section but no transmitting station is allowed to enter this section. To count for points, logs will take the same form as for the transmitting section and should contain date, time (G.M.T.), call of station worked, serial no., sent, serial no., received, band and points claimed. Scoring is on the same basis as for the transmitting section and the summary sheet should be similarly set out.

Your attention is drawn to an error—a vital one—in para. 2.3 of the "Requirements" of this award, published in Sept. "A.R." (page 11). The date should have read "1st January 1846" not "1866."

Para. 2-3 should now read.
2.3. The commencing date for the award is 1st January 1946. All loggings made on or after that date may be included.

SOUTH AUSTRALIA

First note comes from Alan L5085. At 15 years he must be one of our youngest listeners but with QSL's to hand from HK, VS3 TI, W, OA4, 9M8, KGB, etc., it would seem that Alan is another keen and capable a.w.l. on the way up. From Tim L5087 we note another one of our members sitting for the next L.A.O.C.P. 'All the best and hope the No. 19 works out okay.

WESTERN AUSTRALIA

Allen Taylor L0639 has been busy on 30 and 15 metres with PY, EA3, PR7, FBS, JR, CX9 and XE on the former, whilst on the latter band he logged UA1, HMI, LX, 9K3, LA, to name a few. Geoff Taylor L0630 had no luck on 15, but heard CX4, ET3, W4B, W's, HS, DL, VU2 and VR2 on 20 metres. Bryan Taylor L0631 heard Z4D, W XE, V3A, PR7 on 30 metres but the most of us found 15 not over populated. 9K3, EP3 and J4B were logged in that band.

TABELE

Our only news from this State comes from Greg Johnson, who gives us a good report on band conditions over there. On 80 metres he logged all VK States except 9 and 0, plus W's, ZL and YJ. Plenty of QRN and power line noise marred Greg's listening on this band. On 40 metres W's, VEs and G's were coming in amongst the commercial QRM. 30 metres proved good for the American conditions, but poor for the European while 15 metres was spasmodic, but when open Greg says it's terrific, mainly to W, VE and the Islands. NU on 15 metres.

HERE AND THERE

In preparing these notes it is inevitable that some letters will arrive after the notes have been commenced, and it is for this reason that I have included this additional paragraph or so to this month. Mails have been delayed due to the transport situation. The next twenty-one letters must arrive after the normal closing time. First in this batch comes from Warwick L311, who has jumped a few steps up the ladder as a result of QSL's from WSHWR/V9, ZSWWE, HPJMM, YHBB and ZLW. He is a soldier at the base here, but time is still found to explore his hobby band, 20 metre a.s.b. segment. Warwick is another of our young chaps who uses his own home-brew rx, and a very substantial one at

Next we hear from Afion L2136/4, who has just returned from a 7 weeks' trip around the gulf country. Two more confirmations, one from TISEG, and the second from OAAFH take him to 104 confirmed. A reward for patience--It took Afion 18 years to score a card from Peru. Band conditions at Atherton, where his home station is, were the worst ever for the R.D., in fact, nothing has been lodged on any band other than some local s.s.b. on 80.

Back to the Abernethy for a quickie, I have a group of 6000 people who are honouring on China, by re-allocating to him the listener's number 12061, previously held by the late Harney Smythe.

To come to the personal notes for the month we have the results of Eric's 13042 doings over the past few weeks. On 10 he heard VCF's AIDS, AFU, AYU, BX, GK and on 11 he heard WJ's AIDS, AFU, AYU, BX, GK and a number of JA's, one at 1845; whilst on 30 c.w. Erie has submitted a list which sounds like a DX man's dream, ID, GM, CO, QM, JF, WJ, WZ, etc. whilst on 29 he heard UD, UD, UD, YV, etc. whilst on 20 metres make the same list applies, with VSOC, SWIAZ, BGDHJ prominent in the evening hours. In addition to the above, I have also received OAFM, UA (on 30), also UAEAKO, UABKX,

UAIKAG on the same band. SASAD is a newbie taking him to 290 confirmed, whilst V38, 5B4, YV, 4X4, UQ2 plus several others made a good month for him. A card was received from ZLJGX for a 18 Mc report to round the month off.

CARD SWAPPERS

One JA s.w.l. has just sent Eric a dozen different JA s.w.l. cards, all seeking him. None of those received have one bit of writing on them. This morning, together with Eric's letter, I received a similar batch, and they will get similar treatment to the lot 3992 collected. They were returned to the donor without comment, but I will not practice the "letting out of hand, and I urge you fellow s.w.l.s to ignore this business of bulk swapping, or if you must send them a return card make sure that they are cancelled before you send them on. Card exchanges between our own club members suggest that it is the least in order from my point of view, but beware of the chap who requests a pile from you.

GENERAL NEWS

From Eric L3042 comes the news that our former stalwart c.w. type s.w.l. Dave Jenkins is now on the air with the call VK1ABR. Dave will make his mark on the DX ladder when he gets fully set up, in the meantime listen for his key on 40 and 80 metres. Congratulations, Dave.

Look twice at any station using the call VEXU. He has been pirating the licence holder's call and is suspected of operating from Europe. So if you hear this strong signal coming through when the Europeans are betting in, then it is a near certainty that you are listening to a pirate.

On the DX front, one who is noted for his prompt replies to s.w.l.'s where an IRC is added is KW8AZ, Box 402, Vientiane, Laos, at least that was the case a short while ago. Noticed on 20 metres s.w. a few nights ago operating from the Glibert Islands our old friend VR1BZ. Another who QSL's 100 per cent. to s.w.l. reports is KZSTD, who uses the I.S.W.L. bureau.

S.W.L. REPORTS TO W LAND

There is a very strong rumour floating about the A.W.L. circle to the effect that the A.W.L. will not handle, and does in fact not handle, the A.W.L. card file. The A.W.L. is denied most emphatically in a past issue of "Monitor," the official journal of the International Short Wave League, which says, "Coolidge will not destroy all A.W.L. cards he receives, but it takes a lot of time and trouble in sorting them and then distributing them to the local bureau. The trouble is that the individuals who have A.W.L. cards in touch with their local bureau, so cards lie there for three to four years then have to be destroyed. So please don't blame the A.W.L. and don't blame the individuals, the stations are the offenders."

So there you are chaps, maybe that explains why we often have such long delays in getting replies from you. I am sure that you will like to add another subject of QSLing. I would like to add a word on behalf of those hard-working and dedicated QSL managers who act on behalf of the DX man. To those of you who avail yourselves of their services, the overseas man or a s.s.e. to the VK manager is included with your card or cards. I cannot praise too highly the service a person can give to the DX man. I am sure that you, gentlemen, and also the only other two I have uttered, WECTN and Jack White of ZL, fems.

Q54. LADDER

Never fear chaps, I have no intention of deriding this feature. How could I even if I were to, for, not only is letting it put in requests that it remain, And now on to this month's, a careful perusal of which will reveal a few chaps, notably that Eric has gone further ahead.

	S.W.L. DK LADDER		Countries		Zones		W States
	Conf.	Mrd.	Conf.	Mrd.	Conf.	Mrd.	
E. Treble	280	228	47	80			
P. D. Grant	189	169	30	30			
D. Cranley	188	202	39	23			
A. Westcott	154	158	16	11			
A. Smith	142	142	16	16			
L. James	85	191	23	18			
R. Keatney	94	149	22	8			
H. Hilliard	82	121	14	14			
G. Earl	89	103	23	10			
N. Harrison	63	223	22	19			
H. Williams	55	164	14	14			
B. Prosser	34	104	19	8			
R. Harrison	21	7	16	7			
C. Smith	20	8	8	8			
T. Corbin	13	34	9	—			

Sub-Editor: Don Grantley, WIA-12031

S.W.L. COMMENT

The outstanding feature of Amateur Radio this month was the R.D. Contest, and to those Amateurs who made this particular contest their primary listening interest we extend our thanks. Having been out of the past three years so R.D. Contests I cannot but help notice the improvement in the Amateur's ability to handle those tasks that this. It is to be commended, not only from the view of the transmitting side, but from the point of the listening side. As a past year's participant, I wish to name any particular transmitting station as being the best on the band, but I owe a lot of this to the skillful operating of a number of operators on the phone band, such as 3JN, 3BG, 3EO, 3XR, etc., operating w.v. I just wouldn't dare make a choice of any one station as being the best. For my thanks follow. It was a fine contest and we look forward to hearing you all again in the VK-ZL.

From the ranks of the a.w.l. groups come many of the DX men of the future, and these boys will learn their operating habits from what they hear on the air. There is no better place to learn than in a contest, and we look to the operators of today to maintain a high standard for these youngsters to learn from.

CONTENTS

Our next contest will be the VK-ZL DX Contest. This one is our own DX event, and it is held in very high esteem by the DX men throughout the world. I urge as many of our listeners to enter, for there is much really high-class DX to be heard, and rarely do you close your log without a new country. As well as this, entries have been lagging over the past few years, and for the sake of those who spend so much time and energy in preparing this event we should where possible enter a log. Full details in August "A.R."

NEW SOUTH WALES

Little to hand from this group, and it would seem that there is not a lot of listener activity up here. A letter from Mac Hilliard 13/8/77 who at the present time is on holidays at Nambucca Heads. Like most of us P.M.O. types, Mac has to arise early and needless to say the Collins is usually in action before he leaves for work. B.A. sign heard on 7 Macc. The early hours include GW3, SL, DL and many other European countries including a number such as UBS and YU on c.w. New confirmations for him include KM6 and UPI.

From Chas. Abernethy we note that activities have been drastically curtailed due to Mrs. Abernethy's sudden admission to hospital. L.M.S., another had trot in the R.D., curtailing listening time to 6 1/2 hours, most H.M.S. have been back in the evenings where some really good loggings have been made from stations in the Pacific on 20 metres at about 0700x. Listening to the c.w. segment of 7 Mcs. reveals a host of stations operating in the evenings. Truly from all over the world and some doing nothing to write on any one band. A new confirmation from VK4TE.

VICTORIA

Firstly, over to Ian Woodman for the official bulletin. The group is having great success with their broadcasting committee who read the notes for a.w.l.'s on the Sunday broadcast. This experience could prove helpful to these members when they get their tickets. We hope to see all members attending the construction nights on the second Friday of each month, and the general meeting on the last Friday.

Roger Harrison L3186 now with receipt of a card from OAAFD has another zone and country confirmed. Roger is another of our chaps who have their I.A.O.C.P. and can be heard on 5 metres, also 575 Mics. using the call. 3ZRY On the listening side he reports plenty of W's on a.s.b., also an occasional G on 80 metres, the only band available to him at the present time. From Greg Earl an increase in his listings with several new cards take him up closer to the 100 confirmed mark. Keep at it Greg.

Quite large numbers of Amateurs enjoy the use of net frequency operation, particularly those who operate mobile. In last month's "A.R." I stated that these frequencies were known to me. This has raised many queries as to why there are so many different frequencies worked particularly on 6 m.

It is to my way of thinking unfortunate that the DX properties on 6 cannot be more fully utilized, by aligning all our frequencies or to provide at least one common calling or working frequency right throughout VK. As the mobile operation is around quite a considerable period during the day, the chances of observing an opening are far easier with stations operating on one frequency, than scattered throughout the band. From a mobile point of view two bands on the wheel is a safe way to drive. The receiver being locked to one frequency does allow one to concentrate on driving with listening a secondary occupation.

No once again I enter this plea to all those who operate mobile and fixed. A single calling frequency is good. It is not better than any beacon. This has been proved on dozens of occasions during the last season between 144, VKA and VKZ. When working on these contacts were made with operators on the net frequency here in Melbourne.

Availability of crystals for a particular frequency are usually the reasons for starting other frequencies and of course is a legitimate reason. However, here in VK3 we have an excellent source of net frequency crystals, both receiver and transmitter for a very reasonable price—not beyond the average Amateur which provide a crystal beginning to a "National Net frequency" usable in any State.

6L will hold a field day, probably on Sunday, Dec. 12, 1300 G.M.T. Dec. 11 to 1300 G.M.T., Dec. 13. All v.h.f. bands will be used but details have not been finalised. During the Dec. 13 Field Day will be held, I believe on the third Sunday.

A visitor to Melbourne and other States last month, Rod Smith, VK3ZED, had a most interesting time and learning of v.h.f. activity in VK3. He met quite a few Amateurs in Melbourne and was very impressed with the contacts provided Rod with quite a few ideas to use on his return and the VK3 users of 423 can look forward to some further efforts to increase the record from that direction.

73, ZCZC.

NEW SOUTH WALES

By the time these notes appear there will be several of "Mobile" project 3 metre transmitter/receiver units on the air. After some on-air tests the constructional details will be prepared and interested parties will be advised.

The v.h.f. section to the N.D. Contest seemed to go over well but it would be hard to judge because of the State section running with it. It does appear, however, that some system of being able to work a station more than once during the 24 hours would have to be devised to keep interest alive. The State section to the contest was again won by Tony ZKZCZ from Newcastle.

The next major group activity as mentioned last month will be over the New Year weekend on 2 metres. By now most of the Interstate centres have been advised of the contest committee's (VK3) plan for the week-end. Details elsewhere 73, Tim ZKZM.

VICTORIA

Band Report: 6 metres is still very active at week-ends and although no DX has been worked some contacts have been heard which could fill into this category.

3 metres is very active and some country stations are worked during the evenings. The most recent being Bill ZKZL (Bendigo) and Alan ZKZO (Denigquin). Some Melbourne stations recently heard a JA on 3 metres, in fact, it was Frank JA2KJ, a mariner making off the east coast of Victoria, who managed to work at least one Melbourne station using c.w. both ways as Frank cannot modulate his A.

A very strange signal has been heard on 144.3 in Melbourne over the past few months. The signal is being EIR 322.2 (Bendigo) and it appears to be emanating from the newest 1V station in this city. The same signal appears in VK3 6 metre beacon (on 5.75 Mcs).

V.H.F. CONTEST/FIELD DAY

The object of this notification is to inform you of a large scale contest/field day to be conducted by the V.H.F. Group in New South Wales over the New Year holiday period.

It has been found in the past that some very good DX on the 3 metre band can be worked during the New Year. Last New Year a field event was held during the week-end and more than a dozen different field locations were used. Again this year the Group will be running a 3-day event and expect that there will be many field stations operating throughout the State. To make it more interesting and to provide even better chances of DX we would like to suggest that Interstate stations should also take part. This could either be organised by the V.H.f. Groups in each State or by groups of operators going to their own favourite mountain.

The contest is usually run on a point-to-point basis and will be run in 4-hour segments. There is of course no need for Interstate operators to do likewise if there are enough stations operating then the field day attempt to work and set DX records.

It has been suggested that the times would be: Saturday, 1st Jan. 1700 to 2100 E.S.T. (0700 to 1100 G.M.T.—1/1/80). Sunday, 2nd Jan. 0900 to 1300 E.S.T. (2300 G.M.T.—1/1/80); 1100 to 1500 E.S.T. (0100 to 0500 G.M.T.—2/1/80). 1700 to 2100 E.S.T. (0700 to 1100 G.M.T.—2/1/80). Monday, 3rd Jan. 0900 to 1300 E.S.T. (2300 G.M.T.—3/1/80).

On both the Sunday and Monday nights between 2400 to 2600 E.S.T. (1800 to 1700 G.M.T.) skeds will be made with New Zealand stations. This time has been picked as the sun will be about half-way across the Tasman and some good inversion layers, etc. may exist. As the sunrise moves across Australia the aerial conditions could improve, so both South Australian and Western Australian openings are possible.

The same general idea will be made of the midday and sunset time periods. If you or your own group are interested we would like to hear from you with the following details: Name, address and call sign, proposed location, frequency of operation and expected times of operation. This applies to either home or field stations. The VK3 Group will set as the collection point of operational details and group and group and other Amateur news systems informed. As this is such a large-scale activity it will be impossible to obtain all details. Please start the ball rolling in your area as it is only about four months away. Please reply to Tim Mills, VK3ZET, Box 343, P.O., Crownes Nest, N.S.W.

—Tim Mills, VK3ZET.

The August meeting of the VK3 v.h.f. Group was attended by some 50 Amateurs and technicians and was most successful. John Hickson, of Anderson, with his talk on transistors. Among the topics he spoke about was the treatment of the junction and the methods of testing to produce the various types of transistors required today. John also showed some standard circuits used for testing transistors.

The 3 metre for hunk, which are held on the fourth Wednesday of each month, are becoming more popular than ever, possibly because one of our keen participants has been donating prizes to produce the hunk. The prizes range from a QRP/40 down to a humble bag of capsastrors, and he only knows what prize he will win when he is announced. Also it is fast becoming the practice for the fox to put on coffee and biscuits to the hounds after the evening's chase has finished. 73, Cyril ZKZE.

QUEENSLAND

What has happened to the concept of the term net frequency? In line with the policy of the VK3 v.h.f.ers, VKA adopted unofficially net frequencies of 53.035 a.m. and 53.257 z.m. However, as each month passes, the number of "uniform" net frequencies is increasing. It is a fact that the number of stations on VK3 seems to be about to add to the list with a new set!

Some important occurrences last month included first VKA 432 Mc. 1V, reception of TVQ in Japan and a band opening to JA land at 7 a.m. on 29/8/80.

During the Remembrance Day Contest at least 50 v.h.f. stations in Brisbane operated and exchanged numbers. Lloyd 42LJ was heard operating portable from TVQ-O, using their antenna and his 3 metre signal from the channel's antenna was 55, 56 miles away. Let's hear some comments on net frequencies through these columns. 73, Peter ZKFL.

SOUTH AUSTRALIA

Activity it would appear within VK3 is confined to mobile operation on the net frequency of 53.035 megacycles. Mobiles heard on the net are respectively: VK3, ZDX, ZK, ZKA, ZK, ZAP, CL, ZGV, ZIS, ZSF, ZDA, ZAG, ZDV, ZEK, ZMV, ZSF, ZGF, ZDR and ZH.

No reports of Interstate DX are to hand, but reports of Channel 9, Melbourne, are reasonably regular.

The excellent boost to Amateur Radio is the planned television demonstration for the Royal Adelaide Show by George ZSEY and Alan ZBA. The preparations for this have been made for two outside telecasts which has necessitated the pooling of all equipment at their disposal. The majority of their equipment is being used, no more test for the average Amateur.

A visiting visitor to VK3 has been Rod ZKZCZ on route to a scientific conference in VKY land.

Events that have taken place in recent days that have reported on are: a mobile scramble on June 27 and Robert ZSDX again triumphant with Jim ZSDX and Trevor ZSDX in close pursuit. July 3 saw a successful 3 metre band contest with participants. Bob ZSDX was the eventual winner with Colin ZSDX and Gary ZEKZKZ obtaining 3rd and 4th positions.

Before the next fox hunt the VK3s participating in the hunt plan to overhaul Bob's speedometer, as the accuracy of same appears suspicious on such occasion.

July 25 saw a 3 metre scramble event with Edwin ZSTB the winner with Bob ZSDX and John ZSDX obtaining the latter positions.

73, Colin ZSDX.

TASMANIA

Activity in VKY has kept up well during recent months despite the lack of reporting. The Interstate DX has been worked since the April 3 skeds openings. On this occasion ZTAA at Ulverston was keeping regular skeds with VK3. On one night, however, no signals were heard; if barely readable at night, contact was possible in the early morning. There were several reports of good contacts.

A remarkable increase in operation has been noticed in the south since the arrival of a number of 53.035 Mc. mobiles. Very seldom does a CQ or a CQZ go unanswered ever since the day. Most often, however, the reply is from ZTAA. Mobile to mobile distances of 25 to 30 miles are becoming routine for the conversion of these sets.

In the north main activity is on 3 Mc. Arrived Launceston on the 2nd of August, Alan ZKZKZ and Wynyard there should be a number of new stations for the DX season. During June and July VK3 1V signals suggested operation, but no contacts resulted so far.

Stations will be aiming at the 432 Mc. record book this year. Col. ZLZ has had a series of contacts with VK3. Kevin ZKAZ is building a portable power equipment. A contact between two "hilltop" stations, ZTL and ZTAB, 110 miles apart, was recorded—the latter station was a 3 metre mobile.

Rod ZSDX was a visitor to the A.N.Z.A.S. Conference and gave the August v.h.f. Group meeting interesting information on VK3 v.h.f. activities. 73, ZKAO.

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YOUTH RADIO CLUBS

From two and a half States (we have taken them out of representation in VKI) come thought-provoking stories of how an interest in Radio can be a blessing to a lot of blind people a little easier. The VK3 enthusiasts looking after the Royal Victorian Institute for the Blind Youth Radio Club lead the way. Two members of the club have passed Elementary Cheng Cheek, aged 18, who comes from Singapore, and Norman Salmon, aged 14. The presentation of the certificates was made by Cyril Minna, VK3AUM, who is himself blind, while Federal President Max Hull helped by attending and presenting two sets of screwdrivers from Turner Industries. Congratulations go to instructors Ron Barrett, Bruce Whitehead and Bob Whalley.

In VK2 Rex SVA assures me that moves are on the way to help blind kids, although not nearly as far advanced as in VK3. Here in VK1 we are trying to help a young man who is not only blind but has also lost both hands. Many hours of radio theory have been put on tape and he has become a keen S.W.L. and tape-recorded music enthusiast using his feet. (Does anyone have a receiver of the class of an AR88 for a fair price?)

The whole question of participation beyond the s.w.l. stage by the blind (and other handicapped people) needs careful thinking. It would be wrong to lower qualifications too far and allow anyone to buy and operate and turn knobs merely to gossip, but on the other hand the physically handicapped are to be thought of as inferior of almost none they have proved in many countries that they can experiment in some fields of Electronics.

An interesting development in Y.R.S. is the formation of Postal Groups. Kees youngsters who have no club available can now write to a Postal Group Leader for advice. Mona JAKS has a group, and three others are run by Susan BB5B, Roger IRD, and John Thyrd, who are recent graduates of Y.R.S. and obviously carrying on the right spirit. Volunteers are wanted in VK1 to be godfathers (or godmothers) to electronic orphans. Other Divisions might consider this if they have not already.

It is very pleasing to see the growing awareness of Y.R.S. amongst business firms and electronic organisations. Many are now offering jobs and offering (naturally) job preference. Anderson gave \$10 worth of parts to the Institute for the Blind. Overseas Telecommunications Co. has donated a programmed course. Several others I know of in VK3 are doing similar ways but I am not going to be mentioned. They are all aware of a good thing.

Club news from VK3 is interesting. Mr. J. Beasley, of B.W.D. Electronics, lectured to Christian Brothers on the C.R.O. and its many uses in medicine, physics and electronics, and is willing to lecture to any club with ten Leaving or Matric students. Geelong East Tech. School has 34 members, most about to try Elementary. Geelong West Tech. has 13 in existence with success in Elementary and Junior is planning an even bigger open-day exhibition and is proud of the equipment constructed about 15 pieces of apparatus for the Science Lab. Keesdon Grammar goes well with assistance from Allen. Morwell High back in operation with instructor Mr. W. Waldron. Passes in Elementary at Yallourn Tech. by Chris Goddard, C. R. Flood, Peter Buda, and G. Crisp. Geelong East Tech. has 34 members in Baywater High and Chagel College (Geelong). Y.R.S. news will be in the 3W1 broadcast on the third Sunday of each month. The clubs in VK3 is now 28. Looks like VK2 has a challenge!

News from Christmas Island indicates that antennae have a chance of outnumbering palm trees. Don Reed 9DR reports that four members attempted A.O.C.P. recently - two fully practical and two others. They even have a new Chinese technician from Singapore who has started a Chinese language club.

Must mention a local success. Andrew Davis 1DA has obtained WT Operator (Grade 3), and Ross Steele (of Lynnhaven, also) has obtained WT Operator (Grade 3). Andrew is the first of Y.R.S. types to gain both W.T.3 and R.T.3.

News is plentiful as usual, thanks to Jim 2ZCW and his consistent large newsletter. At Kingsgrove North, Bruce Lewis has W.T.3 and R.T.3 and is applying for a D.C.A. Trainee Course next year. At Sydney Teachers' College, Mr. Maurice Coleman has started A.O.C.P. course, hopes to attempt it in January. At the New South Wales Education Administration, Mr. Roy Clarke reports that the equipment of the late John Moyle has been made available for trial use to clubs with the student teachers who will be going

to New Guinea next year. Kyeemagh Sea Scouts had storm damage to their Scout Hall and a power transformer was a casualty from rain but a donation has replaced it. At Kiama High, they are wondering how to take delivery of two 50-ft. telephone poles, but the club for is almost ready and they expect two A.O.C.P. candidates next year. Dorrigo High Club has been out of action in sympathy with Mr. Brown, the instructor, ill in hospital. Ryde High now has a club under Mr. Brian Fowler



David VK3ZZZ and Kevin VK3ZQN operating the Swinburne Electronics Society station during "open day."

(Block courtesy "Contagious," Journal of the Swinburne Technical College.)

YOUTH RADIO SCHEME

Members of the Wireless Institute of Australia will have at least a knowledge that such an activity as the Youth Radio Scheme has been inaugurated by direction of the A.O.C.P. Executive. However, only those directly concerned with the application of the Scheme to the various Radio Clubs will be aware of the precise details of aims, organisation and administration. It is hoped that a series of regular insertions in "Amateur Radio" will rectify this situation and make W.I.A. members sufficiently informed on these matters to enable them to assess the advantages of the Youth Radio Scheme as an adjunct to institute operations.

Accordingly, the following objectives are presented for the benefit of readers—

- To develop in young people an interest in Radio and Electronics, which can be pursued as a vocation or as a hobby throughout life;
- To provide Secondary School students with a hobby activity which will reinforce their school studies in Mathematics and Science;
- To guide into vocations in Radio and Electronics young people who, through participation in Youth Radio Scheme activities, will enter these employment fields with interests and aptitudes already established;
- To assist present and future Club Leaders and Instructors by providing ready-made programmes of theoretical and practical instruction;
- To co-ordinate the activities of present and future Youth Radio Clubs and to promote co-operation and interchange of ideas among Club Leaders;
- To combat juvenile delinquency by providing an absorbing hobby activity which will ensure that members of Youth Radio Clubs are too busy to engage in anti-social acts;
- To co-operate with Schools, Colleges and Youth Movements in the development and fostering of Youth Radio Clubs;
- To give encouragement and recognition to Youth Radio Club members who attain certain specified standards of skill and knowledge of Radio and Electronics;
- To increase membership of the Wireless Institute of Australia by encouraging former Youth Radio Scheme members to become financial Institute members.

of the Manual Arts Dept. (formerly at Ibrox Park High), Fort St. High, with instructor Mr. John Weir of the Science Dept., reports some about to sit for Elementary. Punchbowl Boys' High Club is planning a big exhibition for the School Fete. Marxist Brothers (Fagwood) are still enrolling members.

P.S. (to my good friend SPS): Can't we lure you out of VK3 to make contact with the W.I.A. Wild about coming to our VK1 Easter Convention? T2, Ken HKM.

MAIN INSTITUTIONS

To provide incentives and to give due recognition to Y.R.S. members who demonstrate specified skills and knowledge, the following Radio Proficiency Certificates are available—

- Elementary Radio Certificate,
- Junior Radio Certificate,
- Intermediate Radio Certificate,
- Senior Radio Certificate,
- Advanced Radio Certificate,
- Radio Telephony Operators' Certificates (3 grades),
- Wireless Telegraphy Operators' Certificates (3 grades),
- Radio Instructors' Certificates (3 grades).

Further Certificates are contemplated for Morse Code Instructors and Morse Code Examiners, but to date these have not been implemented.

These Radio Proficiency Certificates are available not only to Y.R.S. members but also to Associate Members of the Institute and to financial members of affiliated Adult Radio Clubs. It is felt that many A.O.C.P. candidates being trained by Clubs will have been away from school for considerable periods and may have lost the art of written expression under examination conditions. By presenting themselves for the awards listed above, such Club members will gain valuable experience and enhance their chances of success at A.O.C.P. level.

Further details of organisation and administration are given in the Form YRS/1 "Administrative Details." Copies are available from Rev. Bro Kinella, C/o School for Blind Boys (St. Edmund's), Wahroonga, N.S.W. Please send a stamped and addressed envelope together with stamps to cover production costs.

(Next month details of Form YRS/2 "Elementary Radio Certificate Conditions"—will be published for information of "A.R." readers.)

STOP PRESS

The August issue of "Break-In," the journal of N.Z.A.R.T., contains full details of the newly developed Youth Radio Scheme in New Zealand. A quick personal reveals close resemblance to the Australian scheme with a reduction in the number of Radio Proficiency Certificates offered to Y.R.S. (N.Z.) members. All members of the Australian scheme offer sincere good wishes to those associated with the New Zealand effort and hope that some form of inter-scheme co-operation may be developed to stimulate added interest.

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FEDERAL AND DIVISIONAL MONTHLY NEWS REPORTS

(SEND CORRESPONDENCE DIRECT TO DIVISIONAL REPORTER NAMED AT PARA. END)

FEDERAL OSI BUREAU

The Guayaquil Radio Club has issued the certificate W.H.C. (worked HC) which is congruent to the Radio Amateur who verifies completion of the certificate of Amateur Radio from HC1 to HC8. There is also a duplicate W.H.C. certificate for those who have worked all eight districts since 1960. The certificate is printed on a 5x7 inch sheet, with a decorative motif and drawn with vignettes of the island of Puna in the era of the famous Incas, and featuring a vignette of the Guayaquil River, existing in the Guayaquil Province. Cards should be mailed to the Guayaquil Radio Club, P.O. Box 3761, Guayaquil, Ecuador or you may send them to the I.A.R.C. Headquarters.

The I.A.R.C. writes "Thank you for your participation in the I.A.R.C. celebration of the I.T.U. Centenary 1947-1967, established at the I.A.R.C. Headquarters, 1963. We are especially proud of this activity in which so many Amateur participants." The 1968 I.A.R.C. Centenary celebration on October 1, 1968, was held and included a repeat of the operation of I.A.R.C. stations with calls 4U1TV through

The Central Radio Club of Bulgaria advises that as from July 1, 1965, fees are required for issuing of the Bulgarian awards for Radio Amateurs as follows: RDS-6 IRCs: RDS-

Any Amateur who contacted the City of Beira in Mozambique between 14th and 23rd August is entitled to an award. Applicants with log entries and a QSL for the station should be sent to: Delegado de L.R.E.M. P.O. Box No. 1334, Beira, Mozambique. IRC's accompanying the log will be appreciated. Active stations now in Beira: CRYAJ, AV, BV, CP, CZ, DQ, EL, FH, GB, GO, HC, HD and LU, and eventually: CRYAK, DL, IT and IW.

Amateur Licensing in Korea: The Ministry of Communication has issued detailed regulations for the Amateur Service. Amateur operator licenses are given to Korean citizens who pass an examination and demonstrate knowledge of radio and electronics. Licenses are granted only to licensed operators and permit communication between Amateur stations. There are three available classes of Amateur licence—3rd class, 2nd class and 1st class. Each has different requirements, the 1st class two being the most stringent. The 3rd class conveying limited privileges and output power available as to frequencies.

The limited privileges for different classes are as follows: The 1st class licensees may use all Amateur bands and modes and have maximum power output of 150 w. The 2nd class licensees may use all Amateur bands except the 14 Mc. band and have maximum power output of 80 w. And there are no special limitations of the modes. The 3rd class licensees may use A1 on portions below 3 Mc. and all modes on portions above 30 Mc. and have maximum power output of 10 w. and transmitters to be crystal controlled.

Ted Ironmonger G8PO is returning to Australia again towards the end of 1963 and will be located in Sydney. He will again take out a VK licence.

NEW SOUTH WALES

This month is the start of the convention season in VKI with both the Hunter Branch and South West Zone over the long weekend. These will be followed in a few weeks by the Illawarra Section at Wollongong and then the Blue Mountains Section during November. In late November the Division is intending to hold a family picnic day. Details later.

The general meeting for October will be on the 12nd with a lecture at W.I.C. by Mr. Allan Morris from D.C.A., and his subject will be Magnetic Amplifiers. This will be followed in November (12th) with a lecture by Hans Ruckert, I.A.O.U., entitled "How I Built My a.s.b. Transmitter."

The Federal Constitution Committee has been meeting regularly. Some repairs and painting have been carried out to the front section of Wireless Institute Centre near the

exercises will take place soon and will make use of the Channel B f.m. unit installed at VKSW. John ZIQ has moved to the west and the work he started in compiling a list of those interested in vehicle call letter plates will be carried on by John ZZJD, C/o Wireless Institute Centre.

The disposal section of the Division is still adding to its range of new equipment and they are pleased to note the increasing interest being shown by both country and Interstate Amateurs. A small catalogue covering the range of items stocked is available and this may be had by writing to and enclosing a B x 4 stamped self-addressed envelope—W.J.N.A. C/o Box 342, P.O. Crows Nest, or to the Disposal Section, Wireless Institute of New South Wales.

The second sub-edition of Amateur Guide material will be available during the month of January and is intended to be used by those who already have the first part. This issue will cost 6/- post paid. Address inquiries to Amateur Guide, Wireless Institute Centre, Crows Nest. Make money payable to the W.I.A. Further: make of the first part should be available each month (10/- post paid) but you will be charged each month. T. Tim. 20/1/4.

WINTER BLANCH

Contrary popular belief, the rumour that the reason for the non appearance of the notes was that the machine was jammed was a coincidence with fast-moving post while driving at 15 m.p.h. under the Cardiff authority while the machine was jammed. The machine was not jammed. The fact of the matter is that I badly galled my typing finger while holding the machine. I was not able to type and recommended some holes in his net. As a result of this accident my otherwise normal appearance was somewhat different. My feelings were rather soured when the low quality machine went into service for the first time. It was not for some minor difficulties with the rewired mechanism on the same low quality machine that I was criticised. I was criticised for everything went well at the September meeting of the branch when 43 members, associates and friends were present. I was criticised for some budgetary facts given by the President. Those who were present will be able to confirm this. The machine was sold very quickly at three for 2/-. In addition, Gordon was criticised for not having a copy of the State W.A.F. R.D. Knowst for Tenzey 12/27. It is a delight to know that a local member has been able to obtain a copy of the State W.A.F. R.D. to be informed that the XYL. Marica is buying him a surprise for the top of the car,

But as far as presents go, almost all the chaps enjoyed Father's Day and some were given most useful gifts—saws, beam rotators and brooms—and one member was presented with a most unusual item; and from outside the family it was a large cork stopper inscribed to be used to defeat the Admiral's Barrels. The winner was scuppernon and he needs the weapon you must be lucky enough if at Toronto to buy—at bargain prices—some fibreglass fishing rods, nearly new and neatly wrapped with wire. Just the thing for catching those rare DX fish I am told, the owner having replaced

them with some new ones from the U.S.A. Or, by journeying further towards Wangi, you may chance to see the Venetian Blind Dipolite, a creature which is said to be the work of Paddy ZAXU, who, by the way, was at the meeting last month to meet the boys. But the new transmitter did not quite materialise, but it is expected that it will be ready when he hopes to convert directly to combs on February 14 if the bank does not find out first. He read all about how to do this on the wall of the bank, and he was told that he will be the invitation of the landlord, who says he'll be glad to do business at the new rate of exchange if it is a pity he has to have the bank's help in his business.

On the a.s.f. front, great things are afoot, what with w.h.b. on two metres and all. Even so, Bill ZEK has taken enough time off a receiver tube and blast furnace to get a receiver tube going on this band. And now he is back with a new receiver and rejoices, which is not the most usual reaction, that others display, I mean. Being the holiday season, several members have forsaken two metres to go on their holidays and get away from it all. But Kev ZEKW is reputed to be buying the harbour bridge to bring back for Mac ZEMO to use as a coat hanger. Won't he be pleased. Bill ZEKW is at Teagarden's and has taken the day off with his holiday, but he is about to bid him adieu, since w.h.b. cannot visit.

Two bob seashells had a strange thing happen the other day while trying to nab a Darwin. He had the good sense to hand out a partake of the refreshments offering. A large man with a blue pencil behind his ear walked up to the same bar with a crocodile on a string walking beside. He asked the barman did they serve Editors at this hotel. The dispenser of beverages replied that there was no mention of any such establishment upon the menu. The large man with blue pencil and crocodile replied, "Good, then I'll have a schooner and my friend here wants an Editor."

From latest reports received there are two well-known cheps lining up for the October exam. This will be a good thing and perhaps they're present to see the new exhibit. As for the branch museum—we already have several Tiring of winning awards in the a.w.I. field, the v.h.d. specialist from Bocrault has entered the annual field, providing a very good example. The same put up in the R.D. Contest were rather remarkable—one YL operator working her set all night for the grand total of eight contacts. After that the connected the net and worked a few more. It was a hard and ran up a good score but the supply of midnight oil was pretty low at the end. It looks as if Bill BXT may have come in first with this area with ZARK. A remarkable last night!

Lee 18J is now OC a.w.l in the Murwellbrook territory and hopes to do something chubwise soon. Tas 8GV is on the air again after finding one of the feeders in the western paddock while Merri 18J is still a mighty lion on a back road. You'll not forget the Movement meeting when President Frank has lined up some interesting information to be given by one of Mr. Mullard's men, the first of a series of three lectures on the same core subject. These are on the 2nd, 9th and 16th of Nov. 1982 in Room 8, Class Building Newcastle Tech. Please you guys, no fireworks. See you. TS, 2AKX.

CENTRAL COAST AMATEUR RADIO CLUB

The last meeting of the Central Coast Amateur Radio Club was held on Friday, August 28, at the School of Arts, Geosford. Twenty-six members turned up on a rather cold night to hear a talk on the use of transistors and microphones by Roy Robinson, of Dunsin. His talk was instructive and interesting and plenty of questions were fired at him at the conclusion. It is surprising that this component can be so smaller than a thermopile or a vacuum tube and that it can do so much work. He thought that mics condensers were the most reliable. He said that components last longer if used continuously and, therefore, do not recommend lovely trips overseas for two or three months as you will return them in a much less reliable condition.

Phil Levenspiel, 27X, moved a vote of thanks for Roy and mentioned a very vivid memory of having received a "belt" from some old capacitors which had been lying on a dusty shelf for months—the occasion hap-

There was some discussion on members joining the I&F net which is in general favour, and more will be said about this later. All members realise the importance of this net and its possibilities during a civil defence

A recent visitor to the district was Clive Cook, 40C, and son Peter. They were having a very pleasant trip mobile and met several of the local Amateurs.

SILENT KEY

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VK2WJ—W. J. Peell.

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you had a good trip home, Rod, and enjoyed your all too short stay in VKT. Maybe we'll see you again some time next year or at least work out 8 metres. I had better get a better aerial first though (h).

(7), Geoff TZAS.

NORTH-WEST ZONE
Well, chaps, by the time this goes to press (unless the Editor decides otherwise) you will all have had your share of the heat or at least in the R.D. Contest. All we can say at this stage is that we hope that everyone put in their leg and tried their best. I for one went flat out for 24 hours—apart from a horrifying experience at approximately ten minutes past six; or I should say 10.15 G.M.T. Saturday, when the antenna change-over relay refused to function, but which I am pleased to relate I managed to loosen up by using ordinary engine oil, not having any Service handy—thought the R.D. was as good as over. One thing that impressed me most this year was the lack of seething hysterics one usually has to contend with—attributed no doubt to the greatly increased population of s.a.b. participants. Also being in the fortunate position of owning a transceiver one didn't have to perform the octopus act of using a dozen arms to go from receive to transmit.

However, in spite of all this, expected in the North-West Zone as well as expected, attributed to unforeseen circumstances as I am about to relate.

Firstly, there was the woeful tale of Sam TZSC, just missing the scene—Sunday afternoon, time approximately 1 p.m.—the a.c. power goes off and did not come on again until 4.30.

Then there was the unfortunate clashing of events that befell Ken TAL—now Ken usually logs the N.W. zone score but unfortunately had to forego any thought of Ham radio that week-end on account of his final firing exam. Anyway, Ken, let's all cross our fingers and wish you the best of luck.

Another sad story was that of Ken TZCS. Now as I mentioned in last month's notes, Ken used a radio controlled golf ball very successfully to qualify for the semi-final in the golf championships—however, something went amiss with the gyro-activated r.f. device and he was unable to continue. Sadly to relate that gold cup won't be standing on his mantelpiece, and to make matters worse, he was unable to get the bookwork since his shack was for 45—anyway, Ken, let's see you back on the air next year with a vengeance.

Ken haven't heard very much of Max TMX lately on the bands, but I did happen to run into the old boy the other day at his place of employment. After dragging me into a

corner and telling me the latest joke from the stock exchange he then said that his interest in Ham radio had not diminished but merely that his attentions at the moment were wholly directed on his stereo hi-f amp—plus system.

George TXL as you all know by now has bought a commercial s.a.b. transceiver and a very nice looking bird it is too. I bet you never ever thought that one day a remark you made once would ever apply to yourself, George? Then just read paragraph 5 of your correspondence to the editor of "A.R." in December 1961 notes! Anyway tycoon or not I'm with you all the way!

Associate Ian EZL has built himself a nice little converter which he uses ahead of an ordinary mantel set. I haven't had the opportunity of seeing it yet, Ian, so what about bringing it along to the next social meeting and showing the boys.

Reg Polden has also been bitten by the construction bug, this time it is a transistorized r.f. It won't be long now Reg before you will be able to hear all that rare DX.

Ray TZRS has changed his vehicle—from beetle to 4-wheel drive. I believe there are 135 willies horses under the bonnet. Now that you have the whip antenna installed Ray, it is only a matter of getting your mouse and then you will be all set to go anywhere.

Looks like there is yet another convert to T.S.M.—none other than that master of the key, TSM. I believe Sam with his 35 w. has over 200 contacts and 4,000 QSLs to his credit. I would hate to think of the chase down at the QSL bureau when you pound the key using 300 watts of c.w. or 400 watts of s.s.b. Sam.

Don't forget the Jamboree-of-the-Air on the 16th of the month—see your local Scout-ling Group and give the kids your support.

TZ, David TMS.

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